THE INDUS VALLEY AND EARLY IRAN

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THE INDUS VALLEY AND EARLY IRAN

BY

Dr. F. A. Khan, T. Pk.

With a Foreword by

Sir Mortimer Wheeler, S. Pk.

DEPARTMENT OF ARCHAEOLOGY AND MUSEUMS
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CONTENTS

ILLUSTRATIONS

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ABBREVIATIONS

Ch.D.	*Chanhu-Daro Excavation*, 1935-6.
M.A.S.I.	*Memoirs of the Archaeological Survey of India.*
M.D.P.	*Memoirs de la Delegation en Perse.*
M.D.	*Mohenjo-Daro and the Indus Civilization.*
F.M.D.	*Further Excavations at Mohenjo-Daro.*
A.R.A.S.I.	*Annual Report of the Archaeological Survey of India.*
Stein. *Arch. Recon.*	*Archaeological Reconnaissance in North-Western India and South-Eastern Iran.*

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F.A. Khan

FOREWORD

By

Sir Mortimer Wheeler, S. Pk.

I am asked to write a note of introduction to Dr. Khan's book, and gladly respond. For a civilization which has been dead this three-and-a-half thousand years or more, the Indus Civilization of which he treats shows an uncommon zest for life. At no time since its first recognition in 1924 has that Civilization—the first in Pakistan and only the third (as present knowledge goes) in the whole of man's time on earth—aroused so much interest and speculation as it does today; not merely in Pakistan and India, to both of which it physically belongs, but in far-off, peripheral places like Paris, London and Philadelphia, which are junior to Mohenjo-daro by centuries or millennia.

This widespread concern in a problem which is primarily Pakistan's is a welcome recognition of the fact that the problem is also a world-problem. In the very few thousand years that have elapsed since civilization began anywhere in acceptable form, the over-all achievement of the human mind and social sense has been little short of miraculous; and wherever that miracle has from time to time been manifest, it is proper and urgent that all available resources of enquiry and analysis should be brought to bear. If we cannot truly understand man's most creative handiwork within the social and intellectual field in varying time and place, we cannot expect truly to understand ourselves. Whilst politicians argue and divide, scientists (archaeologists amongst them) can, and must, agree to work together—whatever their 'race', language or colour. And amongst the major matters which await their wider and united attention is the remarkable phenomenon which is Dr. Khan's concern in the following pages.

He is here in particular working upon the relations, or possible relations, of the basic civilization of Pakistan with the cultures of adjacent countries. In other words, he is trying to discover something about the interchanges which contributed to the beginning and development of the Indus Civiliza-

tion. There can be no more fascinating enquiry than one which thus involves the reaction of mind upon mind, of 'nation' upon 'nation' (to use clumsy words), in a formative age. Such a study as Dr. Khan's inevitably leads him along paths which are at present ill-mapped. That is in itself no drawback. Where he cannot, as yet, make substantive discovery, he can at least help to show where discovery is most needed. If he cannot yet lead the way, he can at least begin to point it.

And here one of the primary questions with which he and his colleagues are confronted is one of chronology. Comparisons between cultures and civilizations cannot carry us far unless they are regulated by a fixed and common time-scale. The interpretation of cause and effect implies a firm knowledge of sequence, without which it is sufficiently clear that neither cause nor effect can be determined. The time is approaching when this factor of chronology in regard to the Indus Civilization will demand a careful review. When did that Civilization begin? What were the main epochs of its rise and decline? When did it perish?

In 1931, Sir John Marshall estimated the antiquity of the key-site, Mohenjo-daro, at 3,250—2,750 B.C. In 1946, working upon a then-recent reappraisement of the Mesopotamian time-table, upon which that of the Indus Civilization was necessarily based, I proposed as a general over-all bracket the period 2,500-1,500 B.C., without insisting upon the absolute validity of either terminal date. Since then a new and important mechanism has come upon the scene. In 1949 the dating of organic materials by measuring their remanent radio-activity was given to the world by Professor W.F. Libby of Chicago. This well-known method, a by-product of nuclear research, though not yet technologically fool-proof, has brought a new dimension into prehistoric archaeology. The phrase "prehistoric archaeology" includes the Indus Civilization, regarding which we have no historical facts whatsoever; and it was, so far as I am aware, Dr. Khan who first had the radiocarbon (or C 14) method applied to remains relating to that Civilization. In 1956 he submitted to Pennsylvania University for radiocarbon analysis a number of samples from the site of Kot Diji, across the Indus 25 miles east of Mohenjo-daro.

These results admittedly require confirmation from further samples, but are provisionally important. There were two cultures on the site.

The upper culture, from layer 1 to layer 3, was pure "Harappan" (Indus Valley). The lower culture, so-called "Kot Dijian", extended downwards from layer 4 to layer 16. Between the two, layer 3A was mixed. Depending upon whether the "half-life" datum was taken at 5730 or 5568, the date of layer 4A (upper Kot Dijian) was given as 2,100 B.C. ± 138 years or 1,975 B.C. ± 134 years. Layer 14 (early Kot Dijian) was similarly 2,605 B.C. ± 145 years or 2,471 B.C. ± 141 years.

Since then the Tata Institute at Bombay has given us a number of radiocarbon dates from two Indus sites on the Indian side of the border: Kalibangan in Rajasthan, and Lothal in Kathiawad. We are told that at Kalibangan a "high" (late) level of the Harappan culture produced alternatively 1,910 B.C. ± 105 years or 1,790 B.C. ± 100 years. On a "middle" level the equivalent dates are 1,960 B. C. ± 105 years or 1,850 B. C. ± 100 years. On a "lower middle" (earlier) level the dates were 2,030 B. C. ± 105 years or 1,915 B. C. ± 100 years. At Lothal a post-Harappan transitional culture (Lothal B) gave 1,800 B. C. ± 140 years or 1,700 B. C. ± 135 years. The underlying Harappan culture (Lothal A) produced from a high level 1,895 B. C. ± 115 years or 1,790 B. C. ± 110 years. From a low (earlier) level it gave 2,000 B. C. ± 115 years or 1,880 B. C. ± 120 years. To these dates may be added a single dating from a supposedly late layer at Mohenjo-daro: 1,760 B. C. ± 115 or 1,650 ± 110.

These samples appear to retract both the upper and the lower ends of my admittedly insecure 1946 bracket. It is suggested that for 2,500—1,500 B.C. should now be substituted something like 2,300—1,750 B. C. This may turn out to be a true approximation for some sites. But before this, or indeed any alternative estimate hardens (as these estimates are liable to do) into an archaeological axiom, there are certain points to be considered.

First, as to the usage of radiocarbon dates. All such dates are given with brackets of error, and these are important. The rash and unscientific custom is growing up of using the central (mean) date without adequate allowance, or indeed any, for marginal variation. The fact is of course that a date with a plus or minus margin of 141 years, for example, may lie anywhere within a bracket of 282 years; and so on. Indeed all the radiocarbon dates which I have quoted are inexact within a bracket of at least

200 years. This is a large potential error in dealing with a total duration (on any showing) of no more than a few centuries.

Secondly, there is no certainty and indeed no likelihood that any of the samples analysed have come from the precise beginning or precise end of a period or of the Civilization as a whole. For example, if a "late" layer at Mohenjo-daro yields 1,760 B.C. ± 115 (alternatively 1,650 B. C. ± 110), that does not imply more than that a late layer was still in process of formation at a radiocarbon date which may be as late as 1,645 (or 1,540) B.C. It does not prove that the site came to an end in either of those alternative dates. Rather does it tend to imply that the site did *not* end precisely then.

Thirdly, until we have something like fifty carefully chosen, carefully collected samples dated consistently by *more than one* reliable laboratory, our argument can scarcely begin. Proved errors are on record, and the only remedy is a multiplicity of evidence.

Fourthly, it is not to be assumed that the Harappan occupation of all sites on which it can be identified was coextensive. It certainly was not. Today, with modern communications, local village crafts and fashions continue in the Indus Valley alongside mass-produced and centralised craftsmanship. The seeming fact, on radiocarbon evidence, that the pure Harappan ceramic did not dominate Kot Diji until after 2,100 (or 1,975) B.C. does not imply that Mohenjo-daro, a mere 25 miles away, did not begin until then. Very much the contrary. Villages and village crafts came and went and changed locally during the Indus Valley period as now, whilst the metropolitan civilization continued upon its almost undeviating course. Indeed evidence is beginning to suggest that Mohenjo-daro goes back not only some centuries before Kot Diji, but also before Indus Valley trade-objects reached Sargonid Babylonia. Early in 1965 three deep borings were made at Mohenjo-daro by Dr. George F. Dales, of the Pennsylvania University Museum; they penetrated from the present surface of the flood-plain adjoining "HR Area" and between "HR" and "L" down to the natural soil. Occupation-material was found at the astonishing depth of 38 feet, where it finally ceased! If to that depth below the flood-plain we add the surviving 31 feet of certain of the nearby mounds above the flood-plain, we get a total accumulation of 69 feet above the first occupation of the site. With all allowance for extensive and perhaps repeated flooding,

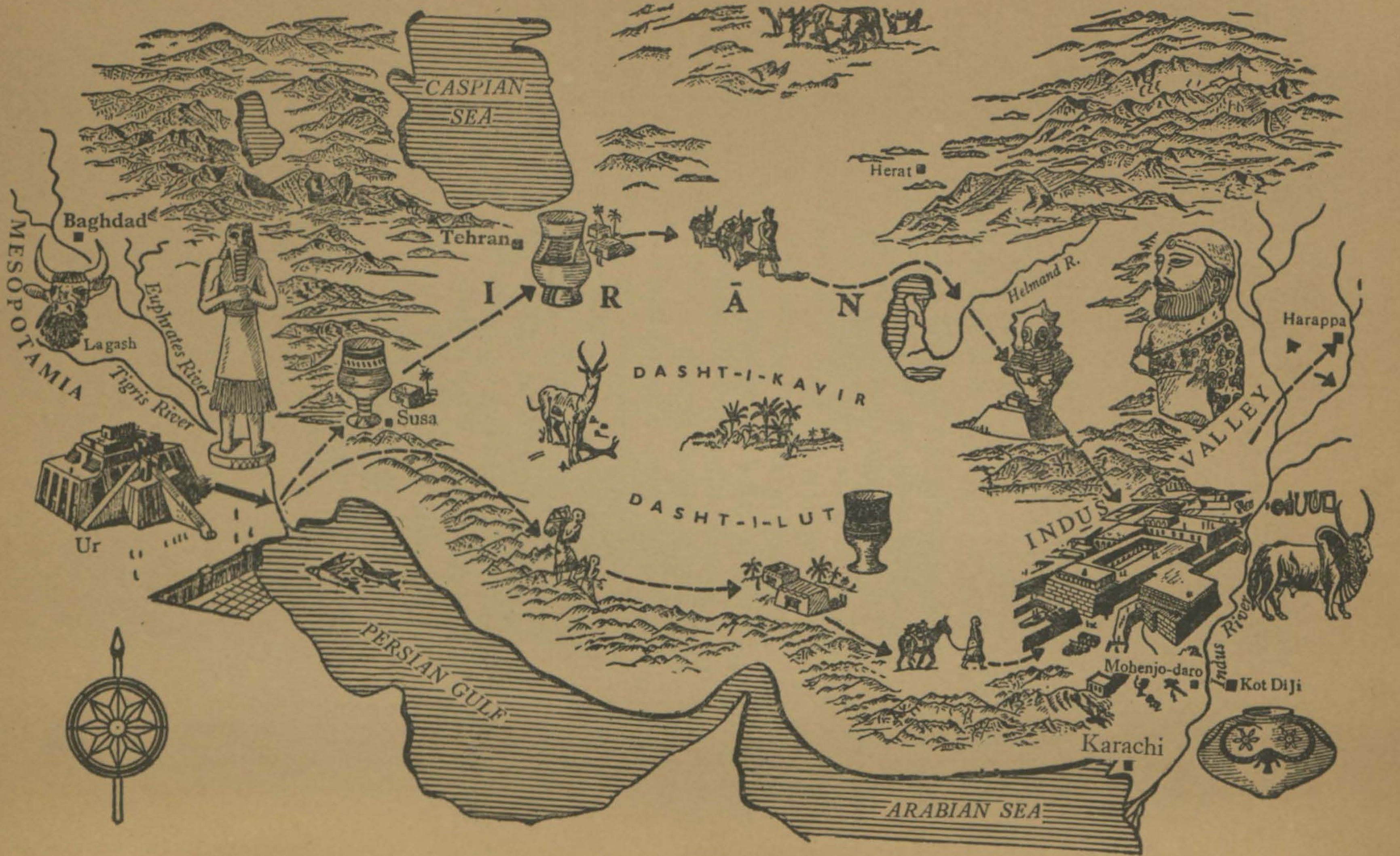
which is another problem, not to be tackled here, it is at least manifest that Mohenjo-daro was not built in a day! When, in time to come, its depths are plumbed on a commensurate scale, it may well be found that my tentative initial date, 2,500 B.C. was excessively conservative; that the beginning of the Indus Civilization was earlier than Wheeler's bracket, even though it may not reach back to Marshall's.

This brings me back to the starting-point: Dr. Khan's enquiry into comparative evidence from Iran and Mesopotamia. It is on comparative evidence, more especially from Mesopotamia but also from Iran and the Caucasus, that the Indus chronology will, with perseverance and ordinary luck, be sharpened eventually to a fine point. It was, as we already know both from archaeological and from epigraphical evidence, in the time of Sargon of Agade and his immediate successors that contact between southern Mesopotamia and the Indus was at its liveliest. And within a mere handful of years the date of Sargon is now securely established: as nearly as may be, 2,370—2,344 B.C.; or, to take the Sargonid period as a whole, let us say 2,370—2,284 B.C. Thereafter a second wave of Mesopotamian trade began with King Ur-Nammu, about 2,100 B.C., and continued until the Larsa period, about 1,900 B.C. Here is no dallying with margins of error between 200 and 300 years wide. Here is near-historical precision of a kind by which new material evidence from the Indus and Mesopotamia, and perhaps a new study of some of the old evidence, may be expected in the fullness of time to lend a fresh exactness to the timing of our Indus Civilization; to raise it at last perhaps from the mists of prehistory, in which it is now half hidden, to the status and personality of protohistory. Set beside comparative studies such as these, radiocarbon analysis, a marvel for which we are properly grateful, is nevertheless a relatively blunt instrument.

I would add, therefore, my good wishes to Dr. Khan and his Department of Archaeology for a continuing and fruitful study of this great Civilization by comparative study no less than by nuclear physics. And it is to be hoped that it may be found possible to harness to these researches a world-wide interest (which certainly exists) in a vast field where wise strategic planning and a measure of central control are the prerequisites of early success.

* * *

THE INDUS VALLEY, IRAN AND MESOPOTAMIA



CHAPTER I

THE GEOGRAPHICAL SETTING

INDUS VALLEY AND IRAN

AN essential preliminary to any discussion of the cultural relationship between the Indus valley and early Iran is an appreciation of the geographical setting of these two regions. It would appear that within Iran itself there is a sharp contrast between the widespread and sterile area in the centre and the peripheral piedmont, although even the periphery is in places interrupted by desert as in south-west Baluchistan. The main lines of communication, therefore, tended to follow the outer circuit of the country and to penetrate abroad through difficult mountain passes wherever these were to be found. Larger urban centres could arise only in places where sufficient water was available. Through these centres the main lines of traffic inevitably passed, and many of the Iranian sites attracted trade with the outside world as far as the Tigris-Euphrates valley on the one hand and the Indus valley on the other. A detailed study of both the larger and smaller centres at which ancient remains are known to exist is now available and the main arteries of the ancient traffic through these centres can be clearly discerned.

However, where ancient sources are deficient, we may often obtain guidance from the descriptions of well-known cities and

settlements in the works of medieval geographers and historians. These later cities are often to be found on the lines of more ancient highways, and it is frequently legitimate to draw inferences from them as to the distribution of much older prehistoric routes. Possible climatic changes may have been responsible for the decay and disintegration of these ancient cities in Iran, in Baluchistan, and in the Indus valley, but the main thoroughfare between these regions has been perennially used. A list of all such ancient cities and settlements which are now known to the archaeologists have been given in Appendix B, and the routes which connect them have been shown on the maps facing page 1 and on pages 6-7.

PHYSICAL FEATURES OF IRAN

Iran, a great plateau with innumerable saline depressions, is cradled between the mountains of Asia Minor on the west and the offshoot from the Pamirs, marked on the map as the Hindu Kush and Koh-i-Baba, on the east, while on the north the Caucasus and Elburz ranges descend southward to the Persian Gulf. The Elburz range overlooking the Caspian Sea lies west-east and reaches its highest point in the snow-capped peak of Mount Demavand. Continuing eastward into the province of Khurasan where it overlooks Russian Turkestan, it approaches the Koh-i-Baba mountain chain of central Afghanistan and other offshoots of the Hindu Kush. The second major range, the Zagros, curves gently south-eastward from its origin between the Caspian and the Black Sea. Skirting the eastern side of the valley of the twin rivers, the Tigris and Euphrates, it joins a number of preliminary ranges which follow the shores of the Persian Gulf, the Gulf of Oman and the Arabian Sea, then turns northward through Baluchistan and Afghanistan, eventually to join the Pamirs.

The major portion of Iran in the centre consists of a vast plateau, of which more than half is completely barren and the other half consists of valleys situated between high mountain ranges. Except on the east, where the plateau merges into Baluchistan and Afghanistan, it is entirely ringed by high mountains. The elevation of the plateau varies in different parts. On the southern side the height drops to the coastal line along the Persian Gulf, and there is a similar descent on the north-

west to the plains of Iraq; between the Caspian Sea and northern slopes of the Elburz the level falls below sea level. This region is densely forested with a heavy and regular rainfall. On the eastern side the height drops continually to Meshed and Herat. Beyond Herat the elevated highlands of Afghanistan lead to the Hindu Kush and to 'Dasht-i-Lut', the great desert on the south-east—one of the driest regions of the world.

The interior of the central Iranian plateau is divided into a series of troughs by low ranges of hills. Since the rainfall is seasonal, being confined to the winter and early spring months only, the water supply is inadequate. However, wherever a permanent water supply was available, settlements flourished.

Judging on this basis, the great plateau might be thought forbidding and uninviting; nevertheless, it is the connecting link between the Near East and the Far East. Migratory movements and great armies have many a time swept across its borders both in prehistoric and historic times.

To the east of this plateau lie the uplands of Afghanistan and the Baluch tribal area. Surrounded by mountains and deserts, and without natural resources except oil which is susceptible of easy development, and without sufficient agricultural land to support a heavy population, the Iranians, nevertheless, as early as the second millennium B.C. began to take their place in history among the contemporary civilized peoples of Western Asia. In the course of 6000 years, there have been many periods when the area has striven to attain a national unity, often under a single monarch, ruling sometimes on the Tigris and Euphrates plain and sometimes in Iran proper, extending its influence as far east as the Indus valley.

THE MOUNTAINS OF IRAN

Iran is not merely a plateau. The Iranian upland is marked by detached parallel chains of mountains with valleys between them. The mountains on the north are the Elburz and Khurasan hills which are a continuation of the Hindu Kush chain. Western and southern Iran is defined by the Zagros, Fars and Makran complex of mountains.

Along the southern borders the mountains approach close to the sea. The central strip lying between Makran and Fars is narrow, dry and barren except in a few areas where water is available.

The Zagros complex of ranges are formed by a succession of anticlines and synclines. The rivers and streams flow in a trellis pattern through the broad valleys. Belts of high mountain pastures and forests alternate with dry lowland valleys. The humid northern Zagros area is succeeded to the south-west by the more arid Fars and the markedly arid Makran to the south-east. The ranges sweep down from the Caucasus after having formed the segment of a circle along the frontiers of Turkey, Iraq and the Persian Gulf, and so pass into the desert plains of Baluchistan.

The eastern slopes of the Zagros form part of the great central plateau which extends as far as the Afghan frontier. Here is found one of the most fertile parts of Iran. The great cities of Kashan, Isfahan and Kerman, the three important trade centres, and the holy places of Qum and Yezd lie here. The roads leading from Tehran to Qum, Isfahan and Shiraz, and from Qum to Kashan, Yezd and Kerman are two of the principal highways of Iran.

The Iranian mountain folds on either side of the great central plateau have been from time immemorial Iran's strength and weakness. From them came precious metals and semi-precious stones. The rivers fed by the snows of these ranges have brought fertility to thousands of square miles in an area of low rainfall. But they also bring, occasionally, desolation in the form of devastating floods or deposition of gravels on cultivated lands, leaving a barren and saline waste of large area. On the whole, the mountains serve the beneficent purpose of reservoirs by holding the moisture that descends as snow in winter, and by releasing it to the low lands in the summer when the sun melts it, to form in the heart of the desert a green oasis of unbelievable charm.

THE DESERTS OF IRAN

Until modern times, deserts have proved more effective as barriers and natural frontiers than any other geographical feature.

The physical and cultural identity of most of the early civilizations was protected by deserts. Although the deserts of Iran are an adverse economic factor in the development of the country, nevertheless, they have played an integral and decisive part in the history of the Iranian people since the dawn of civilization. For civilization belongs to cities, and cities depend upon the cultivatable lands, and are divided by the uncultivatable deserts and arid mountain ranges.

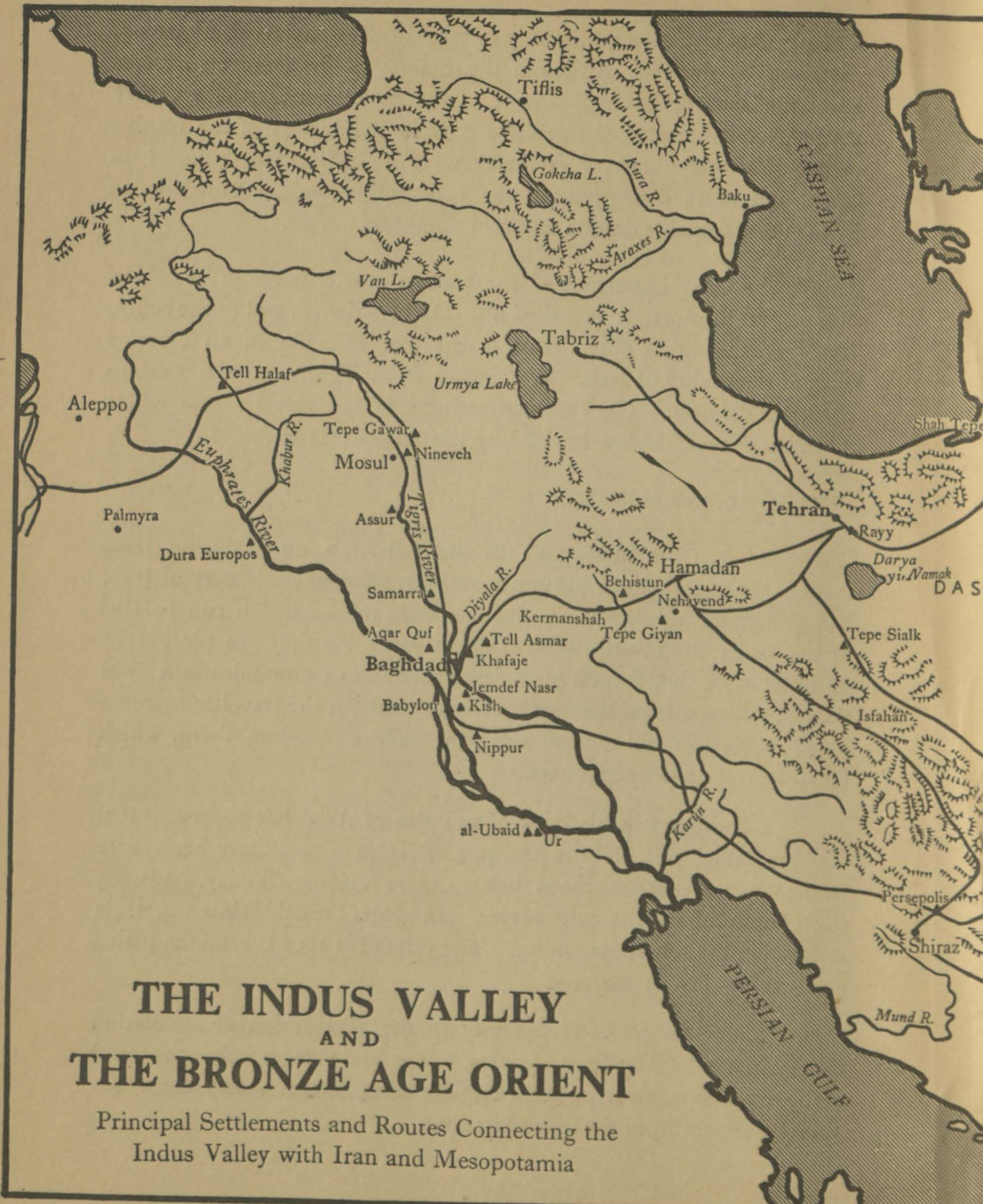
The most important of the Iranian deserts is the great central desert. In the north it is called the 'Dasht-i-Kavir', and in the south, the 'Dasht-i-Lut'. This desert is the manifestation in an extreme form of the aridity of Iran. It stretches from Tehran to the western border of Pakistan. Over great stretches it is impassable except where it has been precariously bridged by the ancient trade routes.

TOPOGRAPHY AND CLIMATE

Between the Indus and the Shatt-el-Arab no navigable river reaches the sea. This important factor has affected the history of Iran. But still more influeneial are the mountain ranges which run parallel to the coast from north-west to south-east. As they are pierced by no waterways, they form a formidable barrier to communications from the sea, whereas from western Iran to Baluchistan the traveller marches between parallel hill-ranges along the valleys between them, which facilitate trade and trade routes.

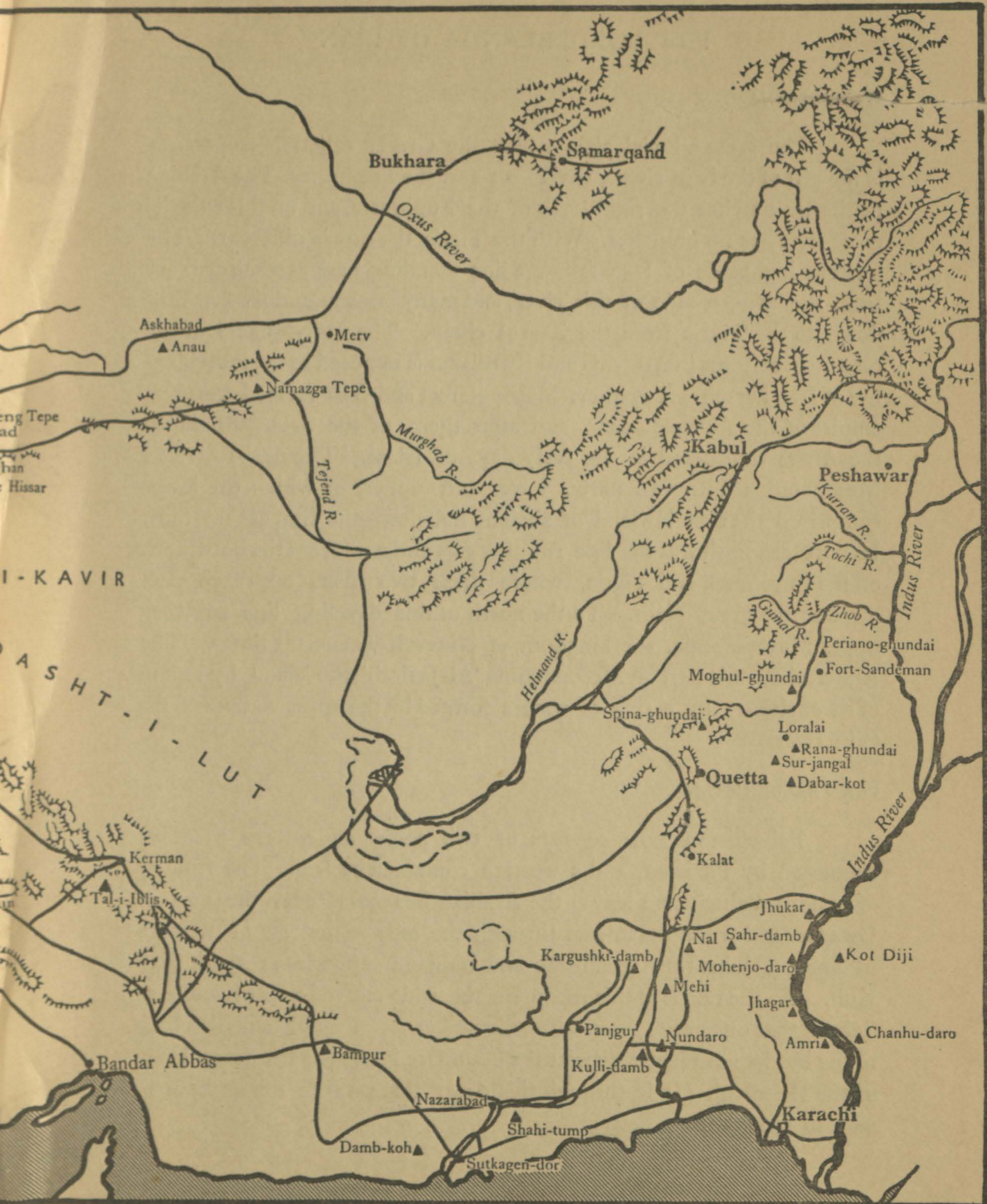
Huntington in his book 'The Pulse of Asia' has observed that Iranian Baluchistan and the province of Kerman must have been more fertile when Alexander passed through these regions. Today, however, the climate of Iran is quite severe. In winter the cold is intense, while in summer the sun is scorching. The rainfall is very low on the plains and the aridity is extreme.

The influence of topography on the distribution of population is very marked. The lines of cities, towns and villages follow the trend of the mountains, their position actually being determined by the availability of water from the upland streams.



THE INDUS VALLEY
AND
THE BRONZE AGE ORIENT

Principal Settlements and Routes Connecting the Indus Valley with Iran and Mesopotamia


Bukhara
Samarqand
Oxus River
Askhabad
Anau
Merv
Namazga Tepe
eng Tepe
ad
han
Hissar
Murghab R.
Tejend R.
Kabul
Peshawar
Kurram R.
Tochi R.
Indus River
Zhob R.
Gumal R.
Periano-ghundai
Fort-Sandeman
Moghul-ghundai
Helmand R.
Spina-ghundai
Loralai
Rana-ghundai
Sur-jangal
Quetta
Dabar-kot
I-KAVIR
ASHT-I-LUT
Kerman
Tal-i-Iblis
Kalat
Indus River
Jhukar
Nal
Sahr-damb
Kargushki-damb
Mohenjo-daro
Kot Diji
Mehi
Jhagar
Panjgur
Nundaro
Chanhu-daro
Amri
Bandar Abbas
Bampur
Kulli-damb
Nazarabad
Shahi-tump
Karachi
Damb-koh
Sutkagen-dor

MESOPOTAMIA

The great alluvial plain which the Greeks called Mesopotamia is the gift of the twin rivers, the Tigris and the Euphrates. The Arabian peninsula touches the right bank of the Euphrates, and on this side the great river has no branches. With the Tigris the case is different. The western highlands of Iran follow a line standing back at some distance from the eastern side of this river, and many streams and rivulets flow down to the Tigris from the Zagros chain. The individuality of the mountain fastness in Armenia and Kurdistan is opposed to the individuality of Iran herself. Together, Mesopotamia and Iran formed the great empire of the Achaemenians, and after them, of the Sasanians, which the Arabs conquered in the early days of Islam. The Arabs divided Mesopotamia into two parts, lower and upper, of which the lower comprised the rich lowland of ancient Babylon—the Iraq of the Arabs. Its northern limit was the line running east and west from the bottleneck on the Euphrates and Tigris, where these two rivers approach each other in the great plain. To the north of this dividing line stretches upper Mesopotamia, the kingdom of Nineveh in ancient times. The Arabs called this part of Mesopotamia 'Al-Jazirah', the island, by reason of its enclosure by a ring of waters formed by the upper courses of the twin rivers.

PAK - BALUCHISTAN

Baluchistan now consists of two parts: an eastern province contained by Pakistan, and a western contained by Iran. The frontier of eastern Baluchistan leaves the Arabian Sea coast near the port of Gwadar and runs north-east through the hilly wilderness of western Makran and joins the Afghanistan and Iranian boundaries at Malik Siah Kuh. To the north of this range are the wide alluvial flats of southern Seistan that once were green with irrigated crops. From Malik Siah Kuh to the borders of Quetta district the boundary intersects the desert basin of the Helmand. It is through this desert that caravan routes have to pass to Quetta from Seistan.

About 40 miles south-west of Quetta, the boundary line between Baluchistan and Afghanistan strikes northward near the Pakistani town of Chaman. From Chaman the Baluch-Afghan boundary runs towards the north-east to the Gomal river which represents the northern limit of Pak-Baluchistan. Irregular and indented as it is, it follows well-defined topographical features for about 600 miles to the sea coast. Along this northern section of Baluchistan, from the head of the Pishin valley to the Gomal river, a large number of prehistoric sites have been located in the Zhob valley. On the south of this valley are the central hills of Pishin and Quetta, which divide northern Baluchistan from Kalat State on further south. The Quetta valley is situated in the centre of Baluchistan. In the southern districts of Baluchistan, in the Kalat State and the deserts of Kharan, we encounter topographical features similar to that of the north—long narrow valleys running parallel to the Arabian Sea coast through Makran.

From the mountainous region south of Kalat, the broken hills continue southwards, culminating in the Kirthar range which runs north and south, and thus determines the shape of the Indus valley.

IRANIAN BALUCHISTAN

Iranian Baluchistan, the ancient Gedrosia, is situated in the south-east corner of Iran, between Kerman on the west and the Indus valley on the east. To the south it is bounded by the jagged cliffs of the Arabian Sea. Even more arid than north-eastern Iran, this region possesses few towns of any size. On its barren and saline belts of mud hills grow scanty, fugitive vegetation. The coastal strip, no less forbidding than the interior, consists of range after range of rugged hills, increasing in height until the Iranian plateau is reached. The fertile zone of upland on the borders of Kerman is not very wide, and decreases in altitude and merges with the waste of the 'Lut'. The whole area, indeed, can be described as partly pure desert and partly desert with oases. To the south-east of Kerman it is pure desert, the scattered settlements being kept alive by occasional springs tapped in the hills, the water of which is carried by the system of undergound channels called 'Karez'. This vast region of Gedrosia does not possess even a single town of any reasonable size or importance. The desert of

Gedrosia has been so difficult to cross throughout the ages that it has, in fact, then and now, protected lower Sind from all attack by the southern maritime route. In the medieval period, invaders from Iran always preferred to face the hardships of the mountain passes of Afghanistan by the direct route from Herat or Seistan across the rich plain of Qandahar, and then through the Gomal Pass to Dera Ismail Khan, or through the Khajak Pass to Quetta and further east to the Indus valley through the Bolan Pass, rather than face this burning desert.

MAKRAN

The eastern part of the coastal region lying along the Arabian Sea, south of Gedrosia, has always been known as Makran. It consists of the country stretching inland for about sixty to seventy miles in width and slopes upwards from the coast to the scarp of the main Baluchistan plateau, varying in height from a hundred to five hundred feet. For the first 20 miles from the coast there is a sandy plain crossed by several small rivers. This strip consists of a series of long parallel sand-chains separating shallow valleys, for the most part bare and barren, until the depression at the base of the border scarp is reached, which is well-watered and dotted with many villages and date groves. The country becomes mountainous further inland.

An exception to the widespread desolation of Makran is found in the valleys of the interior, namely Kej and Panjgur, where crops and date-groves afford a pleasant scene. The major river of this fertile region is the Dasht. Its western branch rises in the highlands of Bampusht where it bears the name of Nahang. After passing the escarpment of the main plateau, it turns eastward through the fertile valleys of Mand and Tump, and at Kej joins its waters with those of its eastern affluent. This affluent, the Kej River (Kech), flows due west through the long valley lying at the foot of the upland ridge which forms a natural highway between Iran and the Indus valley. From their junction, the united streams flow south-west through a wide alluvial plain, known as the Dasht, from which the river takes its name. A belt of mixed jungle and cultivation borders the stream on either side. A previous survey undertaken by Sir Aurel Stein (1931) from the Iranian border to Turbat in this valley

brought to light a number of ancient sites along the highway, which have been further added to by Dr. Henry Field's expedition in 1955 and by the recent explorations of the Department of Archaeology; most of them definitely help to establish connections between Iran, Baluchistan and the Indus valley in antiquity.

To the north of Makran, lying along the entire extent of Baluchistan, is an elevated area 3000 to 4000 feet in height, the so-called Baluchistan plateau. In the north of this scarp, which constitutes the watershed, two rivers—Bampur and Mashkid—fail to reach the sea, and are lost in swampy areas of internal drainage. This is the country through which Alexander passed on his return journey to Iran. It has changed so little in the last two thousand years that if he were to recross it he would notice little difference.

Makran, flanked as it is by great stretches of desert to the north and by the sea to the south, forms a natural geographical gateway between Iran, Baluchistan and the Indus valley. This is, indeed, precisely the role which Makran has played in past ages. All these territories were once under the Achaemenian rule. Alexander on his return from India marched through this area, attempting to force his way by an impassable coast-route to Iran. Later, the Arabs swept through this region and not only conquered all the Indus valley, but set to work to establish a system of roads and irrigation which maintained well-founded cities and towns, turning Makran into a flourishing commercial centre.

SEISTAN

On the north of Makran and across the great desert east of Kerman is the province of Seistan, the delta country of the central area of Iran, into which the Helmand river runs. This area was at some remote period a vast marshy lake, then formed by the silt brought down by the Helmand. The populated area of Seistan on the south was formed by the drying up of this marshy lake. It has water on the other three sides: the Helmand forms its eastern boundary, while to the north and west lies a lagoon.

ANCIENT ROUTES BETWEEN THE INDUS VALLEY AND IRAN

It is a well-known fact that in ancient times the alluvial plains offered favourable conditions for movement from place to place, while the rivers, the mountains, the deserts and the seas formed barriers to such movements. But history shows that they were not impregnable obstacles to a commercially minded people. For sea-faring nations, the ocean gradually provided the easiest routes, while in the valleys the rivers became the highways. Many of the world's great rivers have been through the ages the finest of roads for man and his materials. While the sea routes provided the easiest commercial connections between civilizations in ancient and medieval times, the land routes were also constantly traversed, and they shared with the Mediterranean, the Red Sea and the Persian Gulf the functions of main arteries of trade. In the mountainous regions, the valleys determined the course of such routes. They often led to mountain passes which played important roles in the history of man, such as the Khyber, the Bolan and the Gomal passes of Pakistan, linking the Indus valley and Baluchistan with Afghanistan and Iran.

It is clear that the main passes all over the world have remained unchanged from very early times and these were, therefore, crossed by numerous routes in different periods. These are the few fixed points through which civilizations moved. In fact, until recent times, the ancient routes did not change much. Whenever man wished to establish means of communication to suit his convenience, he fell back upon the old routes, and if ever he encountered any hindrance or difficulty in those routes, he modified them according to his needs and technical ability.

Throughout the Iranian plateau a system of caravan routes links the different provinces. The main routes naturally ran from trade centre to trade centre, and the distribution of ancient sites must be related to them. In the north the main line of communication is the west-east highway across the Iranian plateau and along the Elburz range to Merv and Herat. No less important is the southern route which connects

Susiana and the Bampur valley, extending to Shahi-Tump and Kulli in Baluchistan and Mohenjodaro in the Indus valley. Parallel with the northern route to the Oxus and more direct, this southern land route between Mesopotamia and the Indus valley traversed the length of central Iran through Kirmanshah, Hamadan, Sultanabad, Qum, Kashan, Yazd, Kerman and Bampur, and then passed through central Makran to the basin of the Indus.

It was along this line of communication that in antiquity the early emigrants from Iran entered Baluchistan. This is clearly the most important route linking the north-west to the south-east, and its ancient character is attested by the long chain of ancient sites lying along it from Baghdad to Bampur. In prehistoric times, it would seem that this was an easy route, because it skirted the desert following the slope of the Zagros and passed through flourishing towns and villages. Its possession by the Arabs in later times accounts for their rapid advance into the Indus valley in the 8th century A.D.

From Susa, along this highway, the province of Fars was reached. Here the ceramic products of Tall-i-Bakun show some features of resemblance to the 'Quetta Ware'. The early culture of the Bampur valley sites in south-east Iran also shows unmistakable affinities with the cultures of Shahi-Tump and Kulli. The notable feature is the painted pottery, red and buff, with designs such as humped bulls, tiny horned goats and plants with broad leaves. These decorative elements confirm the relation with a similar stage of ware appearing at the Kulli culture sites, and at Karchat, Shahjo-Kotiro and Chanhu-daro in the Indus valley. This technique seems to have originated in Sialk III-5 and Hissar I C and to have developed at Nineveh during the Jemdet Nasr period.

At a later date, these characteristic features were carried to the east to leave their influence from Kerman to Seistan, Makran, Baluchistan and the Indus valley. Thus, we are dealing with a main route which in antiquity linked south-west and south-east Iran with the former province of Baluchistan and the Indus valley of Pakistan. Extensive surveys and explorations in these areas make it comparatively easier to follow its further course in Pakistan.

From Pishin to the east this highway leads towards the Kej valley, a small district of upper Makran comprising a number of villages. Miri is the chief village of the group, though the largest is Turbat. Kej is reputed to be the hottest place in all Makran. Entering the Kej valley, the road running on the south side of the valley comes to Mand. The Nahang River issuing from the northern range makes a sweep to the south-east, being fed by numerous streams. The next stage on the road is Tump. Passing through date-groves and cultivation, the highway reaches the village of Nasirabad. Here the Nahang meets the Kil river and the two united streams flow south under the name of Dasht.

Stein's survey from the Pak-Iranian border village of Pishin to Turbat in the Kej valley and recent explorations in the area have brought to light a number of prehistoric sites which definitely help to establish connections between Iran and Baluchistan.

Mand-Turbat: to the east of Mand village, which lies on the highway, is Kalat Damb, and further east is the site of Shahi-Tump. At these sites, among the finds a large number of potsherds were found painted with black geometric designs consisting of zigzags and triangles. On the east of Shahi-Tump is the site of Nazarabad. The pottery of this site in form and decoration resembles closely the pottery of Periano Ghundai in northern Baluchistan; it has a darkish terracotta slip and ornamentations with geometric designs in black.

Cairns: some miles north-west of Nasirabad village on the highway, there are a number of burial cairns. These have yielded fragments of human bones and coarse red pottery. With the help of these finds, it has been possible to identify the burial customs here with those at Mughal Ghundai. Other sites in the Kej valley, Balor, Gushanak and Jaren, as mentioned by Miss Beatrice de Cardi (1951), have produced a type of painted pottery known as the Londo ware, related to the pottery of Sialk Cemetery B.

Near Turbat, a number of ancient sites are conspicuous and of great importance. At Shahi-Tump was discovered a cemetery which

contained bodies lying in a flexed position and accompanied by grave furniture consisting of pottery, copper and bronze tools and other objects. The grave pottery is of great significance, as similar pottery occurs at Khurab near Bampur in south-east Iran. It seems to be contemporary with Kulli culture. There are also similarities with the ware from Susa A in south-west Iran.

Turbat-Pasni: from Turbat a route leads lower down along the left bank of the Dasht river and connects Turbat with the seaport of Pasni. It passes through a low and broken chain of hills to the south of the Kej valley.

Turbat—-Hoshab—-Panjgur—-Nag-i-Kalat —-Surab—-Quetta: going from Turbat further eastward, the highway passing through the Kej valley comes to Hoshab where there is a bifurcation of roads. The one proceeding northward crosses the central Makran range and reaches Panjgur, and from there running in a north-easterly direction via Nag-i-Kalat it comes to Surab. From Surab the route passes through Kalat and Mastung to Quetta.

Panjgur Valley: in the vicinity of Hoshab and Panjgur a number of ancient sites have been found. On some sites near Panjgur medieval period glazed pottery has also been found, and the reason for the growth of ancient and medieval settlements there must have been primarily due to the commercial prosperity of Panjgur itself. Favourably situated on the route from Iran to the lower basin of the Indus, it may well have attracted in antiquity and historic times the establishment of a number of smaller communities in its vicinity.

THE RAKHSHAN VALLEY

The Rakhshan valley through which the main road passes after leaving Panjgur, forms the northernmost part of Makran. On the north this valley is bounded by the Siahan range which separates it from Kharan. The river Rakhshan from its source in the Kharan region down to its junction with the Mashkel river at Grawak is about 150 miles long. But in spite of the long stretch of country through whcih the river flows, cultivation is restricted to the middle portion only, the rest

of the country being barren. There is no settlement or site on this part of the road.

KHARAN

The territory of Kharan, which the road traverses after crossing Rakhshan valley, is confined to the waterless basin which stretches from the Iranian part of Seistan to the north-western hilly tract of Jhalawan. In the extreme north the hill ranges of Raskoh divide it from the barren Chagain tract. To the south the hills of Siahan form the boundary with Makran.

The greater portion of this area is absolutely barren. Cultivation is dependent on the flood waters of hill torrents, sufficient only to irrigate a small fraction of the total area of the territory. The majority of the people are pastoral. These conditions explain why such a vast area can maintain a population of only two souls per square mile, the only permanent village of any respectable size being Kharan-Kalat. That Kharan was in antiquity a well populated and flourishing country, is attested by the great number of 'Gabarbands' or stone dams, which in the past irrigated this region. As no archaeological remains, however, associated with those dam-irrigation works has been reported from this area, it is difficult to date them.

SARAWAN

The last physical region through which the road passes before reaching Quetta is the hilly tract of Sarawan, which extends from the district of Kalat towards Nushki, Pishin and Quetta. In this part the road runs across rugged mountains dividing sandy valleys. The country is barren and dreary and narrow winding gorges are plentiful.

JHALAWAN

The mountainous region of Jhalawan through which passes the southern road from Hoshab, Kulli, Nal and Khozdar is bordered in the north by the hill-tract of Sarawan. In the south is situated Las-Bela State; to the west is Makran. The Jhalawan region consists of a series of mountain ranges striking north to south. Their slopes are

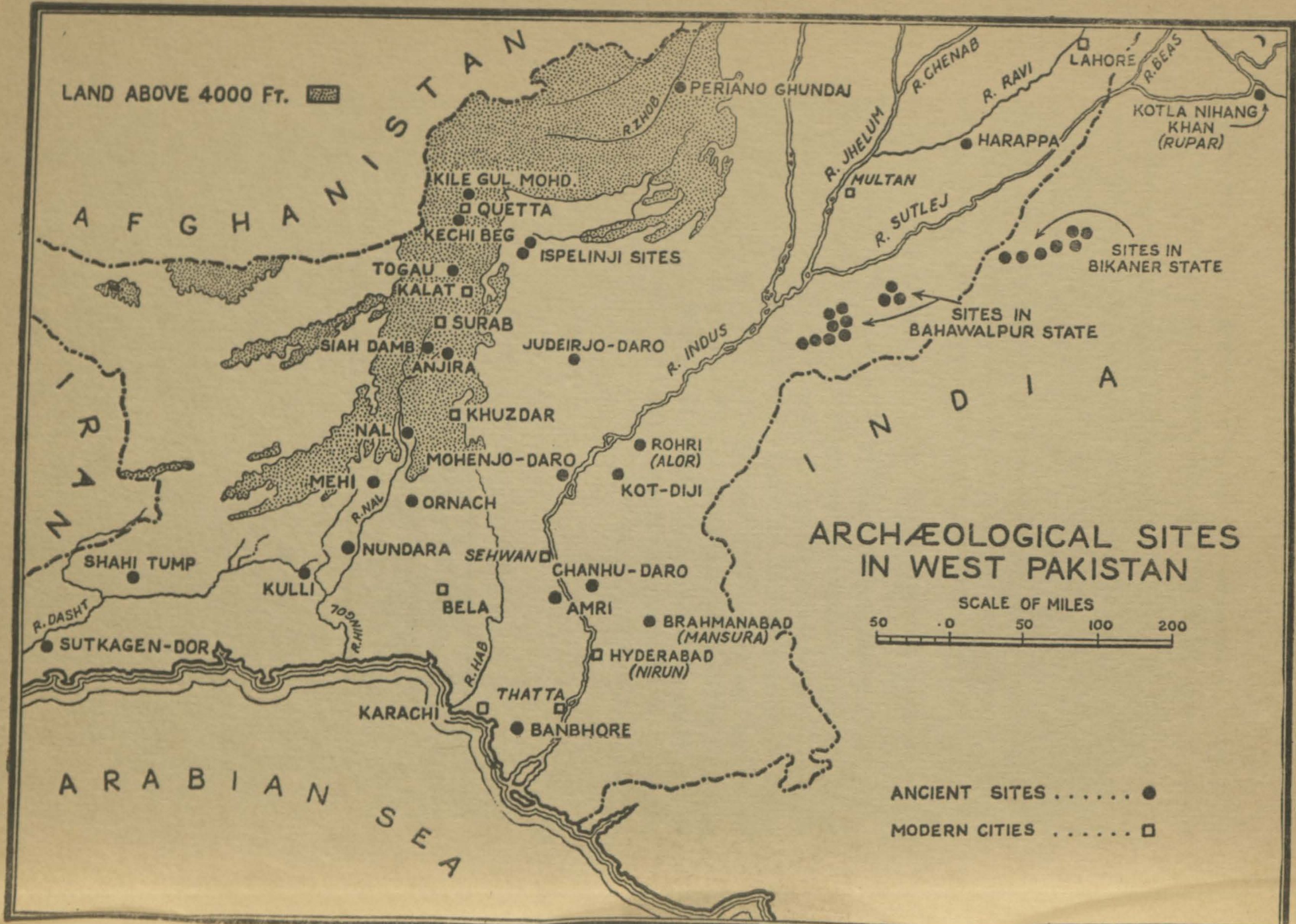
barren, but in the valleys between the mountain ranges, there rise rivers like the Hingol, Porali and Hab which flow down into the Arabian sea.

On account of the dry climate, the majority of the population is pastoral and leads a nomadic life. Though water springs and 'Karezes' are spread over a large area, yet only about one-fourth of the total area is cultivated. The rest is barren waste. The precarious character of the agriculture in Jhalawan deserves to be noticed in view of the number of prehistoric sites discovered in this region. There must have been once a large settled population in this region.

ROUTES BETWEEN BALUCHISTAN AND SIND

Between Baluchistan and Sind, there are two lines of communications. During the winter months when there is snow and intense cold, the same nomadic tribes of Baluchistan migrate in large number to lower Sind. They enter through the Mula pass, following the route of Johi, into the country surrounding lake Manchar. The other route runs through Lak Garre near Kathrach, Lak Phusi and Lak Ruhel, to Sind via Pandiwahi and Tando Rahim Khan. Prehistoric sites at both these places and all other remains along the road to Karachi bear witness to the antiquity of this route.




ARCHÆOLOGICAL SITES IN WEST PAKISTAN
LAND ABOVE 4000 Ft.
AFGHANISTAN
IRAN
INDIA
ARABIAN SEA
PERIANO GHUNDAI
R. ZHOB
R. JHELUM
R. CHENAB
R. RAVI
R. BEAS
R. SUTLEJ
R. INDUS
LAHORE
KOTLA NIHANG KHAN (RUPAR)
HARAPPA
MULTAN
KILE GUL MOHD.
QUETTA
KECHI BEG
ISPELINJI SITES
TOGAU
KALAT
SURAB
SIAH DAMB
ANJIRA
JUDEIRJO-DARO
SITES IN BIKANER STATE
SITES IN BAHAWALPUR STATE
KHUZDAR
NAL
MOHENJO-DARO
ROHRI (ALOR)
KOT-DIJI
MEHI
ORNACH
R. NAL
NUNDARA
SEHWAN
CHANHU-DARO
SHAHI TUMP
KULLI
BELA
AMRI
BRAHMANABAD (MANSURA)
R. DASHT
R. HINGOL
SUTKAGEN-DOR
R. HAB
HYDERABAD (NIRUN)
THATTA
KARACHI
BANBHORE
SCALE OF MILES
50 0 50 100 200
ANCIENT SITES
MODERN CITIES

CHAPTER II

CULTURAL RELATIONSHIP



INDUS VALLEY AND BALUCHISTAN

AN essential preliminary to a discussion of the cultural affinities between the Indus valley and Iran is a survey of the intervening hilly region of Baluchistan. Here Sir Aurel Stein discovered remains of the Harappa culture proper in the latest deposits at Dabar Kot in north Baluchistan, and at Kulli and allied sites in the south. Despite parallels betokening close interconnection between the Baluchi and the Harappa cultures, the chronological relation between the two has not been established with precision. The Harappa designs indeed occur on the pottery of many Baluchi sites and attest that the relevant Baluchi pottery is contemporary with some phase of the Harappa culture. But it is hard to decide at what point in the Harappa sequence should be placed the comparative Baluchi finds. Harappa culture presumably was flourishing before the earliest levels so far reached in the Indus valley, and it may be that one or more of the Baluchi cultures flourished before or at the same time as the Harappa culture.

Apart from the evidence of pottery showing a resemblance to the Harappa culture, mainly drawn from Kulli, Mehi, Dabar Kot, Periano-

Ghundai and Sutkagen-Dor, the following common features in Baluchistan and in the Indus valley are worth recalling: (a) terracotta mother-goddess figurines, humped bulls and pottery bangles at Periano-Ghundai, Moghul-Ghundai, Kaudani, Sur-Jangal, Dabar Kot and Sutkagen-Dor (the goddess figurines from north Baluchistan wear a hood, and those from the south are decked with profuse jewellery); (b) a terracotta model cart found at Shahi-Tump[1], identical in design with those so common on Harappan sites[2]; (c) the incised stone vessel from Mehi[3] (comparable to compartmented incised toilet boxes found at Harappa and Mohenjodaro)[4]; and (d) the copper mirrors from Mehi.[5]

DIFFERENCE BETWEEN BALUCHI AND HARAPPA POTTERY

There are marked differences in the colours used and the slips employed which clearly differentiate the Baluchi wares from that of the Harappa culture.

In the first place, the Baluchi potter employed a red paint in addition to black. On the sites in southern Baluchistan, this red (the secondary colour) is used in horizontal bands; in the northern Baluchistan sites it is employed also in thin outlines or fill-in elements of the design.[6] Apparently more fundamental is a distinction based on the slips employed. On the northern Baluchistan pottery, as well as at Mehi and Sutkagen-Dor, a reddish slip or wash resembling, though inferior to, that of Harappan ware, predominates as a background for decoration. Buff and cream slips are common on south Baluchistan pottery. The Harappan pottery has a pinkish body, red slip and black paint.

RED AND BUFF WARE GROUPS

An attempt has been made to divide the early cultures of Baluchistan and the Indus valley into Red Ware and Buff Ware cultures. Professor

1 Stein, *M.A.S.I.*, 43, Pl. XIV: Sh. T. 11. 12.
2 Childe, *P.P.S.*, 1951.
3 Stein, *M.A.S.I.*, 43, Pl. XXVIII: Mehi, 1.6.4; cf. p.58 below.
4 Marshall, *M.D.*, Pl. CXXXI. 37.
5 *M.A.S.I.*, 43, Pl. XXXII: Mehi, 11.2.1.a.
6 In R.G. III B. we get fill-in elements on pottery.

Piggott, following McCown[7], has grouped the Zhob and Harappa cultures and Cemetery 'H' pottery under the former category, and cultures of Quetta, Amri, Kulli, Shahi-Tump, Jhukar and Jhangar under the latter group. He equates this division with that made by McCown in Iran and considers that the Iranian cultures were parental to those of Baluchistan and the Indus valley in the sense that the Buff Ware province of southern Baluchistan is the easternmost extension of the equivalent south Iranian group, whilst a Red Ware region in north Baluchistan may be equated with a northern Iranian province.[8]

There is, however, no strict geographical or chronological separation between the red and the buff wares. The difference in background is not associated with any significant difference in design; on the contrary, identical ornamental devices occur on red and buff slips.[9] At Nal, which should belong to a 'Buff Ware culture', we find not only identical designs on red and buff ware, but even red and buff vessels of identical form.[10] Moreover, the recent discovery of widely distributed red ware in the area of buff ware in central and southern Baluchistan is a fact militating against McCown's hypothesis,[11] which would differentiate Iran and Baluchistan into distinct Red Ware and Buff Ware provinces. The evidence

7 D.E. McCown in his work *The Comparative Stratigraphy of Early Iran*, 1942, divided the early cultures of Persia on the grounds of pottery colour into a Red Ware culture and a Buff Ware culture. The former includes the cultures of Sialk II, Chashmah Ali, Hissar I and Anau I, all discovered in north and north-east of Iran; the latter occurs at Giyar. V, Susa A, though some Red Ware occurs here as well, Tepe Musyan and Tall-i-Bakun in west and south-west Iran.

8 Piggott, *Ancient India*, 1, p.9.

9 The best example is the intersecting circle which occur on the buff ware of Nal and red ware of the Harappa culture.

10 Hargreaves, *M.A.S.I.*, 35, Appendix IV:
P. 46 Type I (b)—27. E. 27 red ware: 30. E. 31 buff ware.
p. 47 Type I (c)—60. G.3,9 red ware: 61. G.3. 10 buff ware.
p. 48 Type 2—85. B. 30 red ware: 86. C.7. 3 buff ware.
p. 49 Type 3—117. G.3. 21 red ware: 118. G.3. 22 buff ware.
p. 49 Type 4—Tumbler-like vessel. Two specimens, one red, the other buff.
p. 49 Type 5—132. All red ware: 133 Gp. A. 6 buff ware.

11 In 1948 Miss B. de Cardi discovered in Kalat State of Pakistan a number of prehistoric sites. At one of these sites, namely Togau, she identified a new ware. It is hard, well-made, wheel-turned red ware decorated with black designs consisting of geometric patterns and stylized representations of goats and ibexes. This ware has a wide distribution throughout central and southern Baluchistan (*Art and Letters*, XXIC No. 2. 1950.)

does not warrant a separation of Baluchistan into two ceramic provinces, and in fact red and buff wares appear to have been intermingled throughout. It would seem to follow, therefore, that there is insufficient evidence to justify the assertion that north Baluchistan was more influenced by north Iran. But it cannot be denied that Iranian ceramic did influence that of Baluchistan.

At Sur-Jangal the pottery has a pinkish body, deep terracotta slip and black designs. But there are also specimens of painted pottery with a slip of varying shades from buff to cream or greenish-grey.[12]

At Mehi, which, according to Piggott, represents one of the Buff Ware cultures, Stein discovered pottery with black decoration over a red or dark terracotta slip. There are also plain vessels with red slip.[13] Even at Kulli we see light terracotta pottery with black decoration side by side with the buff ware.[14] And finally, vessels coated with a pale buff or cream slip occur at Mohenjodaro.[15] The use of cream and pale slips need not then mean that the southern Baluchistan ware contains a south-western Iranian element lacking in the Harappa culture. Yet it may constitute an additional link with Iran and denote an archaistic survival of a tradition which may once have been common to Iran and the Harappa culture. Although it is demonstrable that buff and red wares are frequently intermingled, it may well be that there are periods at which, in certain districts, the one prevails numerically over the other, as we know was the case, for example, in Giyan III. This is one of the many problems which require stratigraphic solution, and can only be satisfactorily resolved by systematic excavation.

COMMON POTTERY MOTIFS AND DESIGNS OF HARAPPA CULTURE AND IRAN

The repertoire of the Harappa vase-painters included both representational and geometric patterns. As on the painted wares of Iran, they are generally executed on the shoulders and necks of the jars, the lower

12 *M.A.S.I.*, 43, p. 74.
13 *Ibid.*, p. 159.
14 *Ibid.*, p. 123.
15 Marshall, *M.D.*, p. 304. Heavy-based ware, types P,R and S.

portions being left plain. In this arrangement we see a tendency to group the decorative elements in horizontal panels rather than in the vertical registers, so common on Iranian ware.

Some of the designs of Harappa pottery resemble those found in Iran, but the majority are different from the Iranian. The following geometrical, animal and plant motifs occur on the pottery of both countries. To consider first the geometrical devices, it must be remembered that the simple geometrical motifs, such as we are going to examine, do not constitute any proof of relation between the painted pottery of Iran and the Indus valley. Only if there are special features in the painted pottery, as in 'Scarlet Ware,' do such decorative elements imply affinity between the pottery of different countries. Apart from simple and almost universal designs, the following may stand out as significant. The pattern called the 'double-axe motif', in which two triangles are placed with their points together, is found on the pottery of the Harappa culture.[16] This design is common at Susa A[17] and Musyan.[18] It also appears on pottery from Sialk III[19] and Anau.[20] This motif is placed alternately upright and horizontally. On the Harappa sherds the interiors of triangles are hatched, but on the pottery from Susa and Anau, they are painted solid either in black or red paint.

Chequers are fairly common on Harappan pottery. Alternate squares are either filled with solid paint,[21] or cross-hatched.[22] Sometimes the squares are filled with a dot and circle or short oblique strokes.[23] The pattern is quite popular in Baluchistan. It was a favourite motif on the painted ware from Musyan,[24] but is rare on the pottery of Susa A. It occurs in Sialk III,[25] and at Tall-i-Bakun.[26]

16 Marshall, *M.D.* Pl., XCII: 10; 18.
17 *M.D.P.*, VIII. Pl. VII. Figs. 1 and 5.
18 *M.D.P.*, VIII, Pl. VII. Fig. 155.
19 R. Ghirshman, *Fouilles de Sialk*, Pl. LXXII: S. 150.
20 R. Pumpelly, *Explorations in Turkestan*, p. 128. 67.
21 (a). Harappa, *A.R.A.S.I.* 1927-28, Pl. XXXV: g; (b). *M.A.S.I.*, 48., Pl. XXIX:37.
22 Marshall, *op. cit.*, Pl. XCII: 11, 12, 13.
23 *Ibid.*, Pl. XCII: 11, 12.
24 *M.D.P.*, VIII, Fig. 167.
25 R. Ghirshman, *op. cit.*, Pl. LXXX: c. 14.
26 Langsdorff & McCown, *Tall-i-Bakun*, *p.* 37:4. Unfortunately the level in which this potsherd was found is not mentioned.

COMB MOTIF (FIG. I, PL. XXXVII)

This motif, so called because it resembles a comb, is fairly common on Harappa[27] (Fig. 1:2) and Kulli pottery (Fig. 1:4).[28] In Iran it is a common feature on the pottery of Susa A (Fig. 1:7),[29] Giyan IV[30] and Sialk II (Fig. 1:3,5).[31] At Tall-i-Bakun in level IV, the spread-out feathers of a bird painted on a potsherd convey the same idea. These latter representations, in fact, show more resemblance to handled-combs than the former.[32] This design does not occur at Hissar or Musyan.

The comb motif is generally believed to represent a stylized bird or a long-haired and horned mountain goat or sheep. That it represents a horned animal is suggested by the occurrence of animals resembling this motif, portrayed alongside the 'sun' symbol on the specimens found in Baluchistan and the Indus valley.[33] In Susa A, the comb design is one of the commonest decorative elements and terminates in two stylized animal heads. The Giyan specimens are much more sophisticated. Here we see a double-headed comb representing clearly a stylized animal, depicted in profile. The eyes are indicated by black dots in small white circles. The legs, shown fused together, taper down to a fine point. The flowing beards are represented by small sigma-like strokes one above the other. At Sialk II we perhaps see a mountain goat depicted in three different ways indicating the development of this design. In the first instance (Fig. 1:3) we see the hatched body, two curved horns and a thick border along the lower part of the body. In the second stage (Fig. 1:5) the head is missing—the first step in stylization. In the third attempt, even the lower line has been abandoned (Fig. 1: 6)—stylization is complete.[34] We do not get all the stages in the Harappa culture.

27 (a). Marshall, *op. cit.*, Pl. XCI: 13, 16, 24. (b). Majumdar, *loc. cit.*, Pl. XXVIII: 40.
28 Stein, *M.A.S.I.*, 43, Pl. XXX: Mehi, 11.4.5.; Pl. XXIII: Kulli, V. VII. 2.
29 *M.D.P.* Vol. XIII, Pls. XV, XVI and XVII.
30 C. Contenau & R. Ghirshman, *Fouilles de Tepe-Giyan*, Pl. 63.
31 R. Ghirshman, *op. cit.*, Pls. L:A. 2; XLVIII: D. 12; XLV: S. 1522.
32 L. Langsdorff & D.E. McCown, *op. cit.*, Pl. 25: 1,5.
33 The 'sun' symbol occurs on all the examples quoted above from Baluchistan and the Indus valley.
34 R. Ghirshman, *Fouilles de Sialk*, Pls. L:A. 2; XLVII: D. 12; XLV: 1552.



Fig. 1. 'Comb' motifs

1 and 2. Harappa. 4. Mehi. 3, 5 and 6. Sialk. 7. Susa A

PLANT DESIGNS (FIG. 1: 4, PLS. XXXII; XLIII)

As the plant motif is easy to paint and is convenient for filling the surface of a pot, it is fairly common. The plant designs on the Harappa pottery are more naturalistic than those on Susa ware.

The most characteristic plant motif of the Harappa culture is the pipal leaf which occurs on the seals[35] as well as on pottery.[36] Elsewhere it occurs on Mehi pottery,[37] and on early seals from Susa.[38] A tree with spiky leaves occurs on Harappa,[39] Mehi[40] and Susa A pottery.[41] The Harappa pottery plant designs with the exception of the pipal and broad-leaves (Fig. 1: 4) do not occur westward of the Khirthar range, which seems to have formed a natural barrier between the Indus valley and Baluchistan.

ANIMAL DESIGNS (PLS. XXII, XXVII, XXVIII, XLIV)

The animal designs on Harappa pottery are somewhat conventionalized and are arranged on the plan explained on page 24.

The ibex is rarely represented on Harappa pottery. One example comes from Mohenjodaro.[42] In this case the design is painted in black on a light red slip. The ware is light red in colour. The animal has an elongated body and neck, long curved horns thrown back and stumpy legs. The body is hatched. At the back and below the neck in front are series of short strokes, perhaps representing vegetation. The ibex must have been known to the people of Mohenjodaro, as it is still flourishing in the Khirthar hills about 50 miles to the west. The hatching of the body instead of painting it solid black occurs also in the pottery of Early Dynastic Susa D and Musyan.[43] In Susa A the bodies are solid.[44]

The humped bull is not represented on pottery, though the animal is depicted on the seals.[45] But curiously enough, this animal appears on

35 Marshall, *op. cit.*, Pl. CXII: 387.
36 It occurs on Jhukar pottery of Harappa level (Majumdar, *M.A.S.I.*, 48, Pl. XIV: 3); at Chanhudaro in the Harappa level (Pl. XX); and at Ghazi Shah (Pl. XXVI).
37 Stein, *M.A.S.I.*, 43, Pl. XXX: Mehi, 11.1.3.
38 *M.D.P.* Vol. XVI, Pls. VIII, XXI, XXII.
39 Harappa, *A.R.A.S.I.*, 1927-28, Pl. XXXV: g.
40 Stein, *loc. cit.*, Pl. XXIX: Mehi, 11.2.5.
41 *M.D.P.* Vol. XIII, Pl. 1:2.
42 Marshall, *op. cit.*, Pl. XCII: 20.
43 *M.D.P.* Vol. XIII, Pl. XXV: 6.
44 *Ibid.*, Pls. I—IV.
45 Marshall, *M.D.*, Pl. CXI: 328-340.

the pottery of Nal-Nundara[46] and Kulli-Mehi, where it is one of the most characteristic motifs.[47] The bull is depicted on the black asphalt vases of Susa D[48] and on 'Scarlet Ware'.[49] Elsewhere in Iran it does not occur.

RELATIONSHIP BETWEEN HARAPPA CULTURE AND SOUTH-WEST IRAN

Similarities between the pottery of the Harappa culture and that of Susa are the exception rather than the rule. For in the general style of its fabric and the use of black on red, Harappa pottery belongs to a later period than the buff painted pottery of Susa. That there was, however, some very remote and general relationship with the Susa region may be suggested by certain decorative devices common to the Harappa culture and south-western Iranian pottery, though there is a complete divergence in pottery forms. For instance, the double-triangle design is common to both, as well as being found in Turkmenia on the pottery of Anau. Another design common to south-east and north-west Iran and to both Baluchistan and the Harappa cultures is the comb motif (discussed on p. 24), which occurs in Susa A and Giyan IV and yet appears on the later pottery of Baluchistan and Harappa. The triangular motif with a stepped edge that is common on Nal pottery,[50] though it does not occur on the painted ware of Harappa, is represented there by pieces of shell inlay.[51] It occurs also on Seistan pottery[52] and at Anau.[53]

STEATITE VASES (FIG. 2, PL. XLVI)

From the lower levels at Mohenjodaro came a fragment of a green steatite vase bearing exactly the same intricate and very unusual pattern as that of a double vase, and many single specimens of steatite, found at Susa

46 H. Hargreaves, *M.A.S.I.*, 35, Pl. XVII: 59; Stein, *M.A.S.I.*, 43, Pl. XXVI: Nun. 20.
47 Stein, *loc. cit.*, Pls. XXII: Kul. 1, VIII: 1, XXVIII: Mehi, 1.7.2.
48 *M.D.P.* Vol. XIII, Pl. XXIV.
49 *M.D.P.* Vol. XXIX, p. 105.
50 Hargreaves, *M.A.S.I.*, 35, Pl. XVII: 7.
51 Marshall, *M.D.*, Pl. CLV: 33.
52 Stein, *Innermost Asia*, Pl. CXIII. R.R. VIII: 011.
53 R. Pumpelly, *Turkestan etc.*, Pl. 35: 6.

in association with other objects of the period known as Susa D. That the vase of which the fragment from Mohenjodaro formed a part was an importation from the west, is rendered almost certain by its being a greenish-grey steatite, of which it is the only piece that has been found in the Indus valley.

From Kish came three fragments from different parts of the excavations,[54] and a complete cylindrical vase from the Sin temple at Khafajah,[55] similar to those from Mohenjodaro and Susa D. The Kish specimens came from a level which is dated to c.2800 B.C.[56] and the Khafajah vase was found in a building of the Akkadian period, and therefore can be dated to 2300-2200 B.C.[57] The Susa example belongs to the D period which corresponds to the Early Dynastic period in Mesopotamia. West of the Indus valley, vessels of this type are much more common.

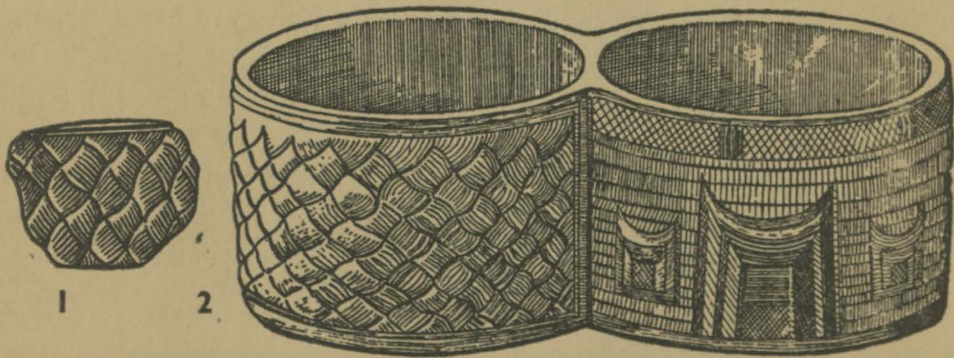


Fig. 2. Steatite vases—1. Mohenjodaro. 2. Susa.

From Mehi come a number of fragmentary incised stone vessels.[58] They include a tiny cylindrical vase; then there is a large cylindrical vase with four compartments. The well-executed incised decoration of these small

54 H. Field, *Antiquity*, VII, p. 85, Pl. 2.
55 H. Frankfort, *O.I.C.* No. 19, p. 53, Fig. 56.
56 H. Field. *ibid.*, p. 85.
57 (a). H. Frankfort, *O. I. C.* No. 16. p. 52; (b). E. Mackay, *Antiquity*, Vol. VI, p. 356.
58 Stein, *M.A.S.I.*, 43, p. 160, Pls. XXVIII: Mehi, 1.6.4. XX: Mehi, 1.11.3. Mehi, 111.11.3.

and elegant vessels consists of hatched triangles and chevrons. These vases seem to have been used for holding valuable scents and cosmetics. Similar incised compartmented vases have been reported at Mohenjo-daro and Shahi-Tump. The Shahi-Tump example is of dark grey clay or stone with incised vertical and horizontal lines and triangles.[59] The Mohenjodaro examples are in the form of small square boxes. The incised decoration on the Baluchi and Mohenjodaro stone ware is similar to that on vases from Bampur. Here, at the prehistoric sites of Bampur and Khurab, Stein discovered complete and broken vessels of a hard dark-grey stone, incised with a finely executed design which represents a hut with a central door and a window on either side. Incised triangles arranged in panels fill the rest of the background.[60] At Bampur and Katukan, Stein also discovered pottery vases incised in the same style.[61] Incised vessels with identical patterns as at Bampur sites also appear at Susa (Fig. 2: 2),[62] in Sumer[63] and at Mari in Syria.[64]

The Susa example is a double jar of steatite, one side of which is decorated with basketry design and the other shows the hut design as on the Bampur vessels. From the Temple of Sin at Khafajah was recovered a complete cylindrical vase which shows all the details of a primitive Mesopotamian hut constructed of reed and matting [65] exactly as at Susa and Bampur. The two designs on it, the incised hut and the mat pattern, provide a connecting link between the Harappa culture, Iran and Mesopotamia. From Mohenjodaro come the two incised boxes, discussed above, and a fragment of a green steatite vase with mat pattern (Fig. 2: 1). Both these stone types are identical with those from Susa and Mesopotamia, as pointed out on page 27.

The Mari specimen is of great interest. Besides the incised patterns of Khurab ware, it also bears an incised rope cable pattern below the door

59 Stein, *M.A.S.I.*, 43, p. 91, Pl. XIII: Sh. T. 11. 19.
60 Stein, *Areh. Recon. etc.*, p. 109, Pl. VI: Khur. Fig. 1. 263; Pl. VIII: A. 34, A. 365, A. 14, A. 412.
61 Stein, *ibid.*, Pl. VI: Bam. A. 161 and Kat. 019.
62 *M.D.P.* Vol. XII: 69.
63 Herzfeld, *Iran in the Most Ancient East*, pp. 89, 90. Figs. 178, 179.
64 Parrot, *Syria*, 1935, pp. 126-127, Pl. XXVII: 3.
65 Andrae, *Das Gotteshaus und die Urformen des Bauens im alten Orient*, p. 76, Fig. 74 *a* and *b*.

and window of the hut. The grey incised pottery from the Bampur valley[66] imitates the vessels from the Sumerian sites of Ur,[67] Tello[68], Adab, shaped like a pyxis, Tell Asmar and Abu Habbah. The Tell Asmar vases which were found in Sin Temple IX may be dated, stratigraphically, to the period known as Early Dynastic II.[69] The incised designs represent prehistoric Sumerian architecture, the origin of which was a hut covered with wicker-work. The Adab example depicts the buildings on the bank of a river which winds through hills.[70] Their first appearance in Mesopotamia is not likely to have occurred before Early Dynastic I; more probably not before Early Dynastic II.

It is generally believed that the incised stone ware with 'hut' design originated in the Bampur valley, where this pattern is also found on pottery. I think that most probably this ware originated somewhere in the west, may be at Susa or in Mesopotamia. At Susa we find the 'hut' design on stone ware as well as on bitumen vases. Another point which would support this view is that in the Bampur region the 'mat' design on stone vessels is completely absent, whereas in the west both 'hut' and 'mat' designs occur together at Susa and Khafajah.

As vessels of the type represented by the steatite fragment from Mohenjodaro are much more common in Mesopotamia and Elam than in the Indus valley, we may conclude that they, like 'Scarlet Ware', originated in Mesopotamia in about 2800 B.C. (Early Dynastic I-II) and remained in fashion until about 2500 B.C. During this period they were, perhaps, imported into Susa, and possibly, at a still later date, a Mohenjodaro merchant on his return trip from Mesopotamia may have carried one complete vessel which, when broken, was thrown away. On the other hand this vessel may have reached the Indus valley direct by the sea route between Sumer and Mohenjodaro, that I have discussed elsewhere.

66 Stein, *Arch. Recon., etc.*, Pl. VI.
67 Woolley, *Ur. Excavations*, II, Pl. 178.
68 Parrot, *Tello*, Fig. 21. j.
69 Delougaz and Seton Lloyd, *Pre-Sargonid Temples in the Diyala Region*, p. 69, Fig. 63.
70 Herzfeld, *op. cit.*, p. 88, Figs. 177-179, and note that Fig. 179 is wrongly described from 'Ubaid' ; it comes from Abu Habbah. See *Ur Excavations*, Vol. 1. (Al-Ubaid) p. 68, footnote 3 and Fig. 27 on p. 69.

RELATIONSHIP BETWEEN HARAPPA CULTURE AND NORTH-EAST IRAN

We have already shown in our discussion of the available evidence that no close relationships can be established between the cultures of Harappa and south-western Iran. Now we will consider some more material from the sites of north-eastern Iran and Anau in the Turkmen S. S. R. First we will examine some distinct types of pottery which appear to be common in Harappa culture and the sites of north-east Iran. These types include dish-on-stand, spouted feeding cups, knobbed ware, perforated heaters and others, but only the last named need be discussed here.

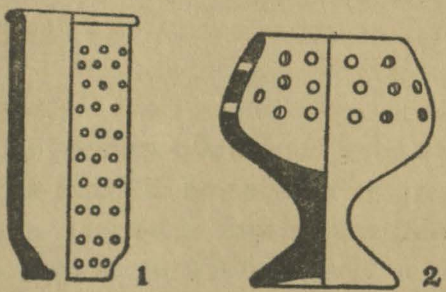


Fig. 3. Perforated vases—1. Harappa. 2. Hissar.

PERFORATED VESSELS (FIG. 3, PL. XXXVI)

Perforated vessels (Fig. 3: 1) are found in considerable numbers on all the sites of the Harappa culture. The majority of the vessels are tall and cylindrical in form. They were shaped on the wheel. Their paste is porous and burnt to a red tone. In some cases the slip is of cream colour. The holes are proportionate in size to the vessel. In some specimens the base, too, is pierced—perhaps to increase the air circulation inside the vessels when the charcoal was burnt.

Outside the Indus valley, this type occurs at Kulli[71] and other prehistoric sites in Baluchistan. At a site near Awaran,[72] Stein found a

71 Stein, *M.A.S.I.*, 43, Pl. XXV.
72 Stein, *M.A.S.I.*, 43, p. 64, 130.

complete vessel with ashes and charcoal. This discovery confirmed the view of Marshall who had regarded these vessels as heaters[73] rather than strainers.[74] But these perforated vessels could have been used as strainers as well.

Perforated vessels have been found in Hissar III, A, B, C, (Fig. 3: 2), Tureng Tepe and Shah Tepe. The shapes are certainly different at these sites, but this fact is of little consequence in view of the general difference in the shapes of the pottery used by the Harappa culture people. At Hissar, perforated vases occur in all the sub-phases of III. Here, in contrast to the Harappa heaters, they are hand-made with granulated yellowish brown and buff surface. The paste is coarse and greyish brown.[75] The Hissar specimens are in the form of a footed chalice without perforation in the base. At Tureng Tepe was found a footed heater of coarse grey ware.[76]

At Shah Tepe a large number of perforated heaters have been found. These are of three types: a coarse ware mixed with grit, red outside, reddish-grey and sooty inside, with close-set perforations; a well-burnt red ware with sparse and large holes; a black ware of even consistency. Most of the vessels are in the form of a bowl with flat bottom.[77]

ETCHED CARNELIAN BEADS (PL. XLVI)

Beads and metal objects similar to several of those from Harappa, Mohenjodaro and Chanhudaro have been found on the sites of north-east Iran also. Their striking similarity to each other suggests a close connection between the Harappa culture and that of the north-east Iran and Anau.

Etched carnelian beads are of three types: one with a white pattern on the natural red background of the material; the second with a white

73 Marshall, *M.D.*, p. 313.
74 E. Mackay, *Antiquity*, V, p. 466.
75 Schmidt, *op. cit.*, p. 180, 184, Pls. XXXVI, XLIII.
76 Wulsin, *Excavations at Tureng Tepe*, p. 9, Pl. XIII: 5.
77 Arne, *op. cit.*, p. 212, Pl. LV.

background and a black design on it; and the third type with a red background and black decoration. The first type is the commonest. It occurs fairly frequently on all the principal sites of the Indus valley.[78] In Mesopotamia, it is found at Kish,[79] Tell Asmar[80] and Ur.[81] In north-eastern Iran, such beads occur at Hissar III[82] and Shah Tepe IIa.[83] Etched carnelian beads are also found in Susa D.[84] The second type of etched carnelian bead is very rare. Its surface is whitened over by some process, and then a design in black is etched by means of a metal salt.[85] In the third type the natural red background is etched in black. This type is also rare.

The favourite patterns include an 'eye' design, 'figure-of-eight' and a very elaborate design consisting of nine compartments: one in the centre and eight around it. The central and the corner compartments each contain one white circle. The 'eye' design occurs on Hissar III etched carnelian beads also.[86] The figure-of-eight was a favourite design in the Indus valley and Mesopotamia. Beads with elaborate patterns seem to be rare, as only two such beads come from Ur[87], two from Mohenjodaro,[88] two from Chanhudaro[89] and one from Shah Tepe IIa.[90] These beads provide one of the most important links between the Harappa culture, Mesopotamia and Iran. Mackay is of the opinion that these carnelian beads were obtained from the Indus valley, for no unfinished specimens have

78 Marshall, *M.D.*, Pl. CXLVI: 43, 44.
Mackay, *F.M.D.*, Pl. CXXXV: 3.
Mackay, *Ch. D.*, Pl. LXXXIX: 1-15.

79 Mackay, *The 'A' Cemetery at Kish I*, p. 56.
80 Frankfort, '*The Indus Civilization and the Near East*', *Annual Bibl. of Indian Archaeology*, 1932, Pl. I: 1.m.

81 Woolley, *Ur Excavations*, II, Pl. 133.
82 Schmidt, *loc. cit.*, p. 223, pl. XXXV.
83 Arne, *loc. cit.*, p. 289. Pl. XCII.
84 The Susa D etched carnelian beads are identical with those from Harappa culture centres and the Mesopotamian sites. These beads are in the reserve collection in the Louvre.

85 H.C. Beck, *Antiquaries Journal*, XIII. p. 384.
86 E.F. Schmidt, *op. cit.*, Pl. XXXV.
87 C.L. Woolley, *Ur Excavations: The Royal Cemetery*, Pl. 133.
88 Marshall, *M.D.*, Pl. CXLVI: 43.
89 E. Mackay, *Ch.D.* p. 201, Pl. LXXIX : 12. 13.
90 T.J. Arne, *op. cit.*, Pl. XCII.

been found in Mesopotamia, though unfinished beads are well-known there.[91]

The Shah Tepe bead shows a remarkable similarity in detail to those from Mohenjodaro, and appears to have been made by the same lapidary who manufactured the Mohenjodaro specimens. This bead from Shah Tepe thus gives a definite clue for establishing cultural contact between the inhabitants of Harappa and the peoples of north-east Iran. And as the Mesopotamian specimens provide evidence for deciding the date of the Harappa culture, so the discovery of an etched carnelian bead at Shah Tepe, identical with those from Mohenjodaro, is a possible indication that the Shah Tepe culture may be contemporary with some phase of the Harappan. As only one specimen of this type of bead has come to light from Shah Tepe, it seems probable that it was imported from the Indus valley *via* Makran, Seistan, Herat, Damghan and Asterabad.

Stein collected some etched carnelian beads from the Bampur valley.[92] But Beck, on account of their patterns and resemblance with some of the beads from Taxila, inclines to think that the Bampur beads are of a late period.[93]

NOTCHED BEADS (PL. XLVI)

Notched beads occur in limited numbers at Harappa and Mohenjodaro. The shape is very peculiar in that the edges of the longer sides are notched.[94] The figured beads are made of faience or some kind of paste which was glazed, and are rhomboidal in section. There are beads of this type from Ur and two specimens are reported from Kish.[95] The latter are made of shell and were found in the 'A' graves, datable to Early Dynasty III. The Harappa specimens are made of either alabaster or faience. The

91 E. Mackay, '*Bead Making in Ancient Sind*', *Journal of the American Oriental Society*, 57. No. 1, p. 3.
92 Stein, *An Arch. Reconn.*, p. 77.
93 H.C. Beck, *Ant. J.*, XIII, p. 393.
94 Marshall, *M.D.*, Pl. CXLVI: 37.
95 E. Mackay, '*Excavations of Palace A and Cemetery A*', *Anthropology Memoirs, Field Museum, Chicago*, Vol. I, parts I & II, pp. 39-40, 186, Pl. 60.

curious shape suggests that they had an amuletic rather than an aesthetic value.[96] Similar beads have been found at both Hisar III[97] and Shah Tepe IIa.[98]

COPPER ANTIMONY POTS AND RODS (FIG. 4, PL. XLVII).

At Hissar, in the burials of III.c., Schmidt found besides other objects some copper rods or pins with blunt ends surmounted with animal figures and with other designs, and small narrow-mouthed vases of pottery and metal (Fig. 4). A cross-shaped rod representing a pair of birds or animals was found placed in a small pottery vase which was filled with black powder.[99] The black powder seems to be antimony. This is a very valuable piece of evidence as it attests the use of black powder with a thin tapering rod. Anyone who is familiar with the eastern custom of using cosmetics and black eye-paint will immediately recognize these tiny narrow mouthed vases and the 'pins' found at so many ancient sites as antimony pots and rods. Such pots with ornamented rods have been found in Luristan and described as 'sepulchral idols'.[100] I think this view is not correct, but the so-called 'sepulchral idols' and their 'stand' are the pots and rods for applying antimony to the eyes.

From Mohenjodaro and Chanhudaro came a number of small cast bronze vases with long necks and narrow mouths.[101] These miniature bronze and polychrome pottery vases (Fig. 4) were perhaps intended to hold some valuable cosmetic stuff, as they could hardly have been used for any other purpose. The Chanhudaro specimen (Fig. 4: 5) is of special interest. It has a melon-shaped fluted body resting on a high pedestal and long plain neck with bead rim. The lower part of the foot is not properly

96 E. Mackay, *Ancient Sind, Sumer and Elsewhere*, p. 463, Pl. on p. 459:3.
97 E.F. Schmidt, *ibid.*, p. 231, Pl. LXIX.
98 T.J. Arne, *ibid.*, Pl. XCII. Grave B. 1157, pp. 83, 148-149.
99 E.F. Schmidt, *Pennsylvania University Museum Journal*, Vol. 23, pp. 414-442, Pls. CXXXI: H. 170; CLII: OF. 19.
100 (a). A. Godard, '*Bronzes du Luristan*', *Ars. Asiatica*, XVII; (b). R. Heine-Geldern, *Journal of the Indian Society of Oriental Art*, Vol. IV, p.11.
101 (a). John Marshall, *M.D.*, p. 492, Pl. CXL: 16; (b). E. Mackay, *F.M.D.*, Pls. CXXVIII: 18, LIV; (c). E. Mackay, *Chanhudaro*, Pl. LXXIII.

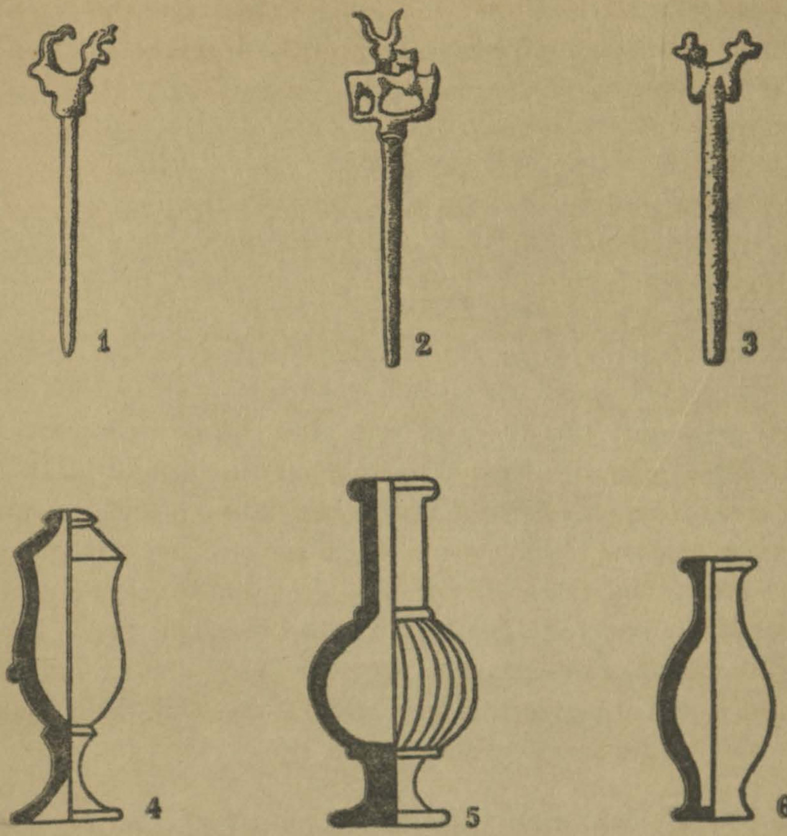


Fig. 4. Antimony rods and pots—1,2, 4,5. Harappa. 3 and 6. Hissar III.

smoothed so that the vase wobbles slightly. This minor defect was rectified in other specimens. The vertical fluted ornamentation of its body is unique, and is perhaps the earliest example of its type. It does not occur elsewhere in that period.

Piggott, inverting this elegant vase, has described it as a miniature mace-head and has compared it with mace-heads from Luristan, Hissar and Cemetery 'B' at Sialk.[102] I think it is more appropriate to describe this 'metal object' as a cosmetic or antimony pot rather than a mace-head for

102 S. Piggott, *Ancient India*, No. 4, p.38, Fig. 5: 1.

the following reasons: it is too small to be a mace-head; the perforation for holding the mace does not run right through it, as in the case of Iranian specimens; the opening of the mouth is too narrow to hold even a miniature handle of a mace, it measures only 0.22 inches. The total height is 3.6 inches, of which the neck is 1.4 inches. Our argument is strengthened very much when we compare with it the Mohenjodaro bronze miniature plain vase which is of the same form and size.[103] Two more specimens from Mohenjodaro, one in bronze (Fig. 4: 4) and the other in polychrome pottery, made on the same lines[104] further support our view-point.

ANIMAL-HEADED PINS (FIG. 4, PLS. XLVII; XLVIII)

The other ornamental type of pin found in the Harappa layers of Harappa and Mohenjodaro is the one which has its head surmounted by one or two animals or birds. Pins of this type are rare: only three specimens have been found. From Harappa comes a pin (Fig. 4: 2) with a horned goat attacked by a dog.[105] Two pins, one in bronze[106] and the other in ivory,[107] were found at Mohenjodaro. The former depicts a pair of 'black bucks' (Fig. 4: 1) in seated position, and the ivory pin head, the lower part of which is missing, represents a dog.

Like most of the metallic objects found on Harappan sites, the animal-headed pins were cast and their distribution is very wide. The earliest specimens come from Susa A, which, if correctly assigned to the Uruk period, need not be later than 3300 B.C.[108] At Kish, Mackay found in Cemetery 'A', probably of early Dynastic III date, a bronze pin with two horns.[109] At Chagar Bazar Professor Mallowan discovered two pins: one surmounted with a pair of doves and the other (from a grave) with a long-horned goat.[110] These pins may be of approximately the same date as the Kish specimens:

103 Marshall, *M.D.*, p. 492, Pl. CXL: 16.
104 Mackay, *F.M.D.*, Pls. CXXVIII: 18; LIV: 1.
105 Vats, *Excavations at Harappa*, Pl. CXXV: 36.
106 Mackay, *F.M.D.*, Pl. C: 3.
107 Marshall, *M.D.*, Pl. CLVIII: 1.
108 *M.D.P.*, Vol. XXV. p. 197, Fig. 34.
109 E. Mackay, *The 'A' Cemetery at Kish*, p. 46. Pl. XIX: 12-14.
110 M.E. L. Mallowan, *Iraq*, Vol. III. p. 27, Fig. 8:2. and pl. XLIII: 18.

c. 2900-2700 B.C. From the fourth Shaft Grave at Mycenae, dated about 1600 B.C., comes a ram's-head gold pin.[111] At Alishar in the period of the Hittite Empire bronze and copper pins show a great variety of forms. One pin-head is in the shape of a bird.[112] The double-headed animal pin found in Koban cemeteries is in the style of Harappa pins,[113] but unfortunately it is non-stratified, and therefore we do not know whether it belongs to the earlier or later Koban periods which Schaeffer has dated 1550-1400 and 1400-1200 B. C.[114]

Similar ornamented pins have been found in Luristan graves.[115] The majority of these pins have been dated by Przeworski between 1250-600 B.C.[116] Animal-headed pins do not occur at Sialk and Giyan; but in Hissar III we find such pins among the mortuary equipment. There, from the 'first warrior's grave', besides other grave goods, comes a copper pin with bird heads.[117] The pin found in the 'second warrior's grave' ends in two horned animal heads (Fig. 4:3). A similar copper pin with a ram as head was found in the grave of the 'little child'. This type does not occur at Shah Tepe, Tureng Tepe, or Anau.

OTHER OBJECTS

Other objects of common resemblance between the Harappa and north-east Iranian cultures include the following: gold fillets with perforation at ends; bronze coiled bracelets and finger rings; terracotta human and animal figurines; double-headed animal protomes; zoomorphic vases; bird whistles; marbles and toy cart-wheels.

BRONZE COILED BRACELETS AND FINGER RINGS (PL. XLVI)

On the Harappa culture sites bracelets and finger rings were made in metal, faience, shell or pottery. The majority of these are made of a single

111 Evans, *The Shaft Graves etc.*, p. 43, Fig. 34: b.
112 Von der Osten, *The Alishar Huyuk Seasons of* 1930-32, Part II. p. 253, Fig. 283: e. 945.
113 F. Hancar, *Eur. Sept. Ant.*, VII., 1932, p. 146. Fig. 17: d.
114 C.F.A. Schaeffer, *Stratigraphie Comparee' etc.* p. 533.
115 F. Hancar, E.S.A. IX., 1934, p. 101. Fig. 42.
116 S. Przeworski, *Archaeologia*, 88.p. 237.
117 E.F. Schmidt, *Penns. Univ. Museums Journal*, Vol. XXIII. p. 422, Pl. CLII; pp. 422-466, Pl. CXXXI.

wire, but some coiled specimens have also been found. The coils vary in number.[118] Bracelets and rings of this type first occur in Hissar II,[119] but are more common in III. Some of the Hissar bracelets have twelve coils.[120] All these bracelets are made of medium thick copper wire, forming rings which are coiled. Coiled bracelets and rings also occur at Shah Tepe, but the coils are not as many as at Hissar III.[121]

DOUBLE ANIMAL PROTOMES (PL. XLV)

Double-headed animals are by no means unusual in the Early Dynastic and Agade periods of Mesopotamia. From the Royal Cemetery of Ur come a pair of golden antelopes and bulls of remarkable workmanship.[122] In Hissar III level, Schmidt discovered a number of small double animal-protomes in copper.[123] They resemble those from Luristan.[124] No double animal-protomes in metal or pottery have been found in excavations on Harappan sites. But now we know that similar double animal-protomes were made at Harappa, as one terracotta specimen of well-burnt pinkish clay and representing a bull has been found at Harappa on the surface by Colonel Gordon.[125] This piece is of great interest as it provides another linking point between the Harappa and north-east Iranian culture. The function of such double animal-protomes is indeterminable.

BIRD WHISTLES

Bird whistles in the form of hens are fairly common at Harappa and Mohenjodaro. They are hollow and have a small hole near the tail, which, when blown, produces a loud shrill note. The pedestal-like base permits of their easy standing.[126] Exactly similar bird whistles have been found at

118 Unfortunately the coiled metal bracelets from Harappa or Mohenjodaro have not been illustrated, but a pottery specimen from Chanhudaro very well attests the use of coiled bronze bracelets. (Mackay, *Chanhudaro*, Pls. XC: 34; XXIII.)
119 E.F. Schmidt, *ibid.*, p. 120, Pl. XXVIII.
120 *Ibid.*, p. 206-207, Pls. LIII, LIV.
121 T.J. Arne, *ibid.*, p. 297, XCII.
122 C.L. Woolley, *Ur Excavations*, Vol. II, Pl. 142.
123 E.F. Schmidt, *ibid.*, p. 188, Pl. XLVI: H. 5141.
124 R. Heine-Geldern, *ibid.*, p. 12, Pl. XVII: 6.
125 His collection is in the Institute of Archaeology, London, and the specimen in question bears catalogue No. 51/1929.
126 Marshall, *M.D.*, p. 551, Pl. CLIII: 17, 18.

Shah Tepe.[127] Arne has described them as theriomorphic clay vessels. I think they are toys. Even today Indian and Pakistani children have such terracotta toys. They are not found elsewhere in Iran.

ZOOMORPHIC VESSELS

With one exception, such pots are unknown on Harappan sites, though they are well-represented in Sumer,[128] Susa D[129] and Hissar III.[130] The Harappa specimen which comes from Mohenjodaro is of pottery and is covered with a creamy slip. It is in the shape of a couchant ram.[131] The modelling is excellent, the body is hollow and there is a hole in the middle of the back. The Susa D specimens are in the form of seated animals and birds. One of the Hissar III vessels represents a ram in grey ware decorated with burnished straight and zig-zag lines. It has curved horns and the eyes are indicated by small rings; there is a tubular hole in the middle of the back.[132] A painted clay sheep in a form resembling the Shah Tepe specimen, but with an opening in the middle of the back like the Hissar vessels, was discovered by Ghirshman in Sialk III.7.[133]

MARBLES

And finally we come to marbles which are known from many ancient sites. They have been found in large numbers at Anau III in pottery and stone.[134] They are plain as well as incised.

127 T.J. Arne, *op. cit.*, *p.* 257, Fig. 537a.
128 H. Frankfort, *O.I.C.* No. 17, p. 33, Fig. 27. This is a bird-shaped pot.
129 *M.D.P.* Vol. XIII, Pls. XXXVII, XXXVIII.
130 E.F. Schmidt, p. 188, Pl. XLVI: H. 2785.
131 E. Mackay, *ibid.*, Pl. LXVI: 23.
132 E.F. Schmidt, *Excavations at Tepe Hissar*, p. 189, Fig. 113.
133 R. Ghirshman, *Sialk I*, Pl. 1. XIX, 2.
134 R. Pumpelly, *Turkestan*, *p.* 182.

CHAPTER III

FURTHER EXCAVATIONS IN THE INDUS VALLEY



KOT DIJI AND AMRI

THE recent excavations in the Indus valley, particularly those at Kot Diji and Amri, have made significant additions to our knowledge of the Harappa culture and its chronology as well as its relations with other prehistoric cultures, thus widening the scope of its study in the context of the major civilizations of the Indus valley and western Asia. These discoveries are still under study and only preliminary reports on them have been published. Nevertheless, an account of the Indus valley without a reference to them would be incomplete and hardly justifiable. Of the two excavations, Kot Diji[135] was investigated by me, while Mons. J.M. Casal carried out the digging operations at Amri[136]. The note on the latter site includes extensive reproductions from the excavator's preliminary report.

KOT DIJI CULTURE

During our recent excavations on the prehistoric mound at Kot Diji in the Khairpur plains of West Pakistan, we have come across interesting

135 F.A. Khan, *Kot Diji; Pakistan Archaeology*, No. I, pp. 39-43; *Illustrated London News*, May 24, 1958, pp. 866-867.

136 J.M. Casal, *Pakistan Archaeology*, No. I, pp. 57-64. Since the writing of this chapter, the complete report on Amri Excavations has been published: J.M. Casal, *Fouilles d'Amri*, Part I and II. Paris, 1964.

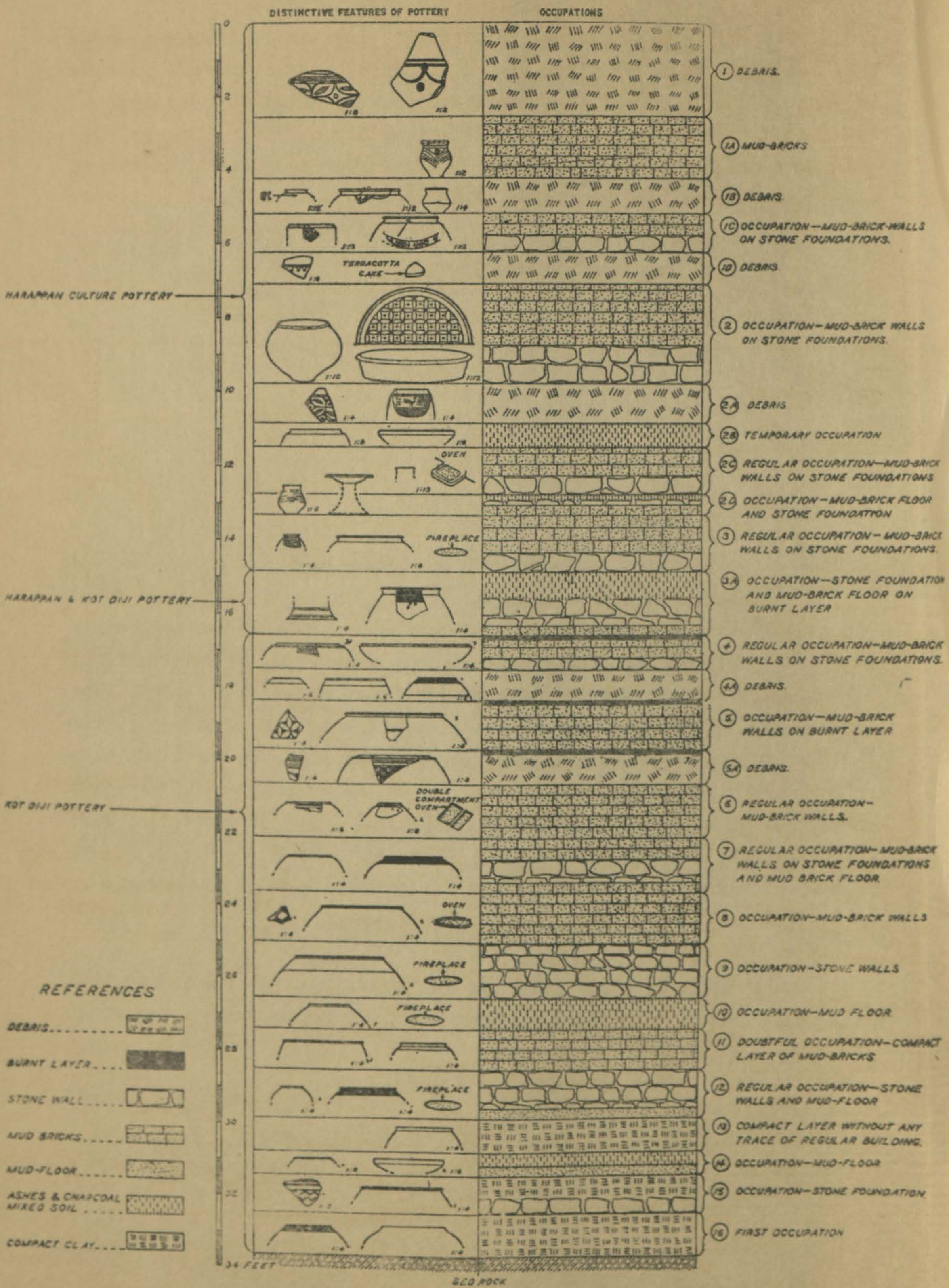


Fig. 5. The Kot Diji sequence, showing Harappa and pre-Harappan 'Kot Diji' levels

evidence relating to the Indus civilization. The site measuring some 600 feet by 400 feet and 40 feet high from the surrounding level consists of 2 parts: a high citadel mound and a lower city extending far outside. On the citadel mound, a couple of deep trenches laid across the defence wall were sunk to the bed-rock, digging through as many as 29 main and subsidiary layers. The upper levels represent typical and mature phases of Harappa culture. They have revealed significant information

THE INDUS VALLEY

HARAPPA AND KOT DIJI CULTURE SETTLEMENTS



regarding the chronological development of the Indus civilization. But what is of greater significance is that, underneath the Indus levels, 17 feet deep accumulation upto the bed-rock was found to contain a new cultural element of pre-Harappan date, but in no way inferior to that civilization. The Kot Dijians, as we may designate the settlers of these early levels, possessed a highly developed and sophisticated culture of their own with a superior skill in pot-making, town-planning and fortification, from which the Harappans appear to have borrowed certain ideas including a few ceramic motifs.

HARAPPA CULTURE POTTERY

The Kot Diji chronology is based mainly on the evidence of pottery, as it was the only material present in the lowest levels; and the specimens recovered from the stratified layers of the site provide us with a complete and interesting series of sequences from the present surface down to the bed-rock.

Pottery from the upper levels, that is from layers 1 to 3 including half a dozen subsidiary layers, is, as already stated, of the typical and mature Harappa culture. It is wheel-turned, well fired, thick-textured and heavy, usually with a bright and glossy deep-red slip, on which the well-known Harappan designs of pipal leaf, fish-scale, intersecting circles, linked balls, peacock, antelope, sun-symbol and other patterns in black paint were executed in the usual bold, free and assured but conventional style, clearly a product of long usage. There are repetitions of the same motifs, and except the half pipal leaf, no other new design has been observed. Their only difference from Harappa and Mohenjodaro specimens lies in the brightness of colour and well-preserved condition of the collection—probably because the Kot Diji site is comparatively free from the devastating effects of salt.

The pottery forms recovered from these levels include the common Harappan types such as dishes-on-stand, beakers, goblets, basins, storage jars, cups, saucers, jar-covers and lids.

The dish-on-stand was a popular form during the Harappa settlement. It occurred in three general varieties: (i) large and heavy squat form with the usual Harappan painted designs on both the dish and the stand;

(ii) short or medium-long plain stem with comparatively larger dish painted with circular bands or incised concentric circles; and lastly, (iii) those with long and narrow plain stem and large dish, decorated with incised nicks or stamped mat-pattern in the centre of the dish only. Some of these incised or stamped decorations are extremely attractive. All the types are wheel-turned. The dish and stem of the third type were prepared separately and joined together before firing.

The dish-on-stand occurs in north-east Iran, but is not found at Sialk and Giyan in the north-west or at Susa and Musyan in the south-west. The squat form is met with in Hissar II.b, dated by Professor Mallowan to the Jemdet Nasr period (c. 3100-2900 B.C.) in grey pottery[137], in Shah Tepe II.b[138] and in Anau III in Russian Turkestan.[139] In a slightly different form it occurs also in Anatolia at Alishar[140] in chalcolithic levels.

The second and third forms are found again in Hissar II.a and III.c, and in Shah Tepe II.b. This type also occurs in the graves of Early Dynastic II at Khafajah[141] with a slight variation.

The dish-on-stand, therefore, has a very long history in Western Asia as it came into vogue in the Jemdet Nasr priod or thereabout (Hissar II) and continued to flourish through the Early Dynastic and Agade periods; in Anatolia too it was a popular form in the early Hittite kingdom. As the dish-on-stand occurs also in Kot Diji levels, it provides us with an interesting, if somewhat generalised, basis for comparative study.

It is not known definitely what purpose the dish-on-stand served. It appears likely that it was used both for ritual and domestic purposes. The Khafajah specimens found in the graves might have had both connections. In modern India, the Hindu worshippers carry flowers, fruits and sweetmeats on dish-on-stand for offering to gods and

137 E.F. Schmidt, *Excavations at Tepe Hissar*, Pls. XXVI, LIX.
138 T.J. Arne, *Excavations at Shah Tepe*, Iran, Pl. LXXV.
139 R. Pumpelly, *Excavations in Turkestan*, Vol. I. Pl. XI. Fig. 6.
140 H.H. Von der Osten, *The Alishar Huyuk*, Part I. p. 67.
141 H. Frankfort, *Excavations at Khafajah* I.I. C. No. 20, Figs. 33, 34.

goddesses. The squat type is used universally for keeping fruits in modern homes.

A number of large Harappan jars with deep red glossy slip were uncovered in the upper levels, but as they were found in well-preserved condition, they were kept 'in situ' on the site. Among the neck-pieces brought for study, a few have interesting painted designs such as half pipal leaf, which was not observed in any other Harappan site except Chanhudaro[142]. Most of the pieces represent plain jars, some with Harappan script

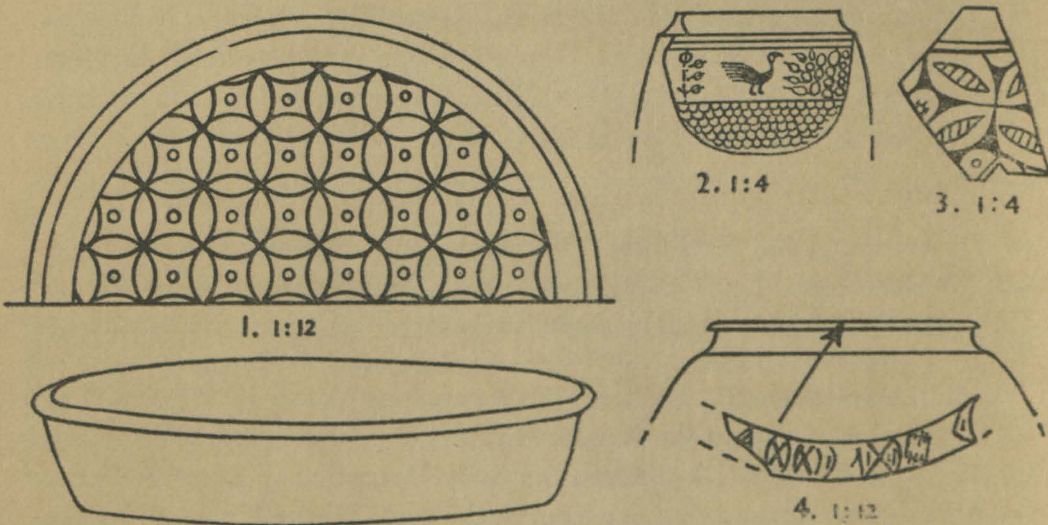


Fig. 6. Harappa culture pottery from Kot Diji

incised on the rim or body. Mention must also be made of small thin-textured jars with very bright red slip and finely drawn motifs of peacock and fish-scale.

Complete pots recovered from the Harappa levels represent mostly vases, both plain and painted, of usual shapes found in other Harappan sites. An interesting handled type has the appearance of a 'Kamandlu' of the Hindu 'Sadhus'. The usual forms represent pear-shaped medium-sized vases, small narrow-based vases with bulbous body and pedestal,

142 E. Mackay, *Ch. D.*

foiled pots with open mouth, and tiny toilet containers. Painting is restricted to line decoration and balls on the body.

The next large number of complete pots represents straight-sided beakers with flaring rims, delicate and small handled-cups with ring or short handle and tiny lids with conical knobs, typically Harappan in shape and decoration.

A few pottery stands are also interesting. Reference to a large bath-tub in layer 2, now kept 'in situ', has already been made.

EARLY INDUS POTTERY FROM LOWER LEVELS

The plain and painted pottery from the upper levels, being typically Harappan in character and similar to those of other Harappan sites, though extremely well-preserved, can hardly claim any special interest. But the Harappan pottery with some apparent difference in characteristics, which has been recovered from 'Kot Diji' levels in two squares in the outer city area, is of special interest.

Our stratigraphical studies indicated that the settlement in the outer city area ended earlier than in the citadel, and the culture from layer 2 downwards upto layer 5 on bed-rock was found to be purely of Kot Dijian character. When, therefore, Harappa culture pottery was found down to layer 4 in a few squares in this area, the material was carefully examined which revealed interesting possibilities. But since the number of objects studied and the area investigated were alike limited, our conclusions could be at best provisional.

It seems that the Harappa culture at this stage, as shown by some of the painted pottery specimens, represents an early phase of that civilization, when, though the normal Harappan forms were developed, decoration remained still uncommon. No complex designs such as the intersecting circles, bird, plant or pipal leaf motifs of the mature Harappan phases are found. In fact, the recognisable painted designs were confined to the representation of antelopes with hatched body, a crudely painted peacock, the 'fish-scale pattern and the linked or suspended balls. This last design occurs on vessels at the basal junction of the slipped and un-slipped

portion. The typical deep red glossy slip had not yet fully developed; the slip applied on this pottery is fugitive and is easily washed off.

On two potsherds appear antelopes painted in black on red slip. The beasts are crudely drawn; their long horns terminate in tufts; the tails end with a plume and the body is hatched. At their back stands a peacock. Another painted potsherd discovered in these levels indicate the beginning of bird and animal designs on Harappan ware. The painting in question looks like the undeveloped form of the well-known peacock design, many of which painted on bright red-slipped pottery have been recovered from upper levels of the site. Here the peacock has the Harappan features with elongated body and long tail, but the technique of painting is primitive and is executed in freehand style without the firm and sure lines and intricate details which later on developed into an assured conventional motif.

A study of the plain and painted pottery from this area, therefore, suggests that it represents an early phase of the Harappa civilization. This early period pottery is not available from the water-logged lower levels at Mohenjodaro or from other excavated sites of the Harappa culture. Fortunately, water-logging problem does not exist at Kot Diji, as it has been clearly shown that the early Harappan settlement was built over the remains of the Kot Dijians who originally settled on the bed-rock.

It seems probable that this early Harappa phase is contemporary with a late Kot Diji phase, as represented in the adjoining trenches. In this phase, the continuous loops on Kot Diji painted pottery had already developed into fish-scale patterns, and new and complex motifs were introduced which seem to have had some influence on the Harappan painted designs. This contact, however, does not appear to have been more than a temporary one or on a small scale, probably representing a small settlement of alien artisans, as it apparently did not affect the main current of Kot Diji life and culture. On the other hand it may have exerted some influence on the development of Harappan ceramic art by the introduction into it of some derived Kot Dijian elements.

KOT DIJI CULTURE POTTERY

Below the Harappan settlement, a thick layer in 3A spreading all over the site coincides with a complete break in the cultural sequence. The underlying strata from layer 4 to 16 yielded a new type of ceramic ware which constitutes the principal element of this pre-Harappan culture. Its distinctive features are a fine thin body, short beaded or slightly everted rim, a fugitive broad band round the neck in red, brown, sepia, or warm black, varying from 1 to 3 inches in width, painted on a cream or dull red slip. It is wheel made and its clay is well-lavigated. The ground varies from pinkish to red colour. It has only occasional affinity with the normal Harappan ware either in texture, form, or decoration.

Though this pottery is recognisable by these broad features which remained unchanged from the beginning to the end of the Kot Dijian settlement, stratigraphical studies revealed interesting stages of development in its style of decoration and, to some extent, in its texture and form also. In the earlier stages this pottery is distinguished by a thinner texture and a squat globular form, and by its almost rimless and neckless open mouth.

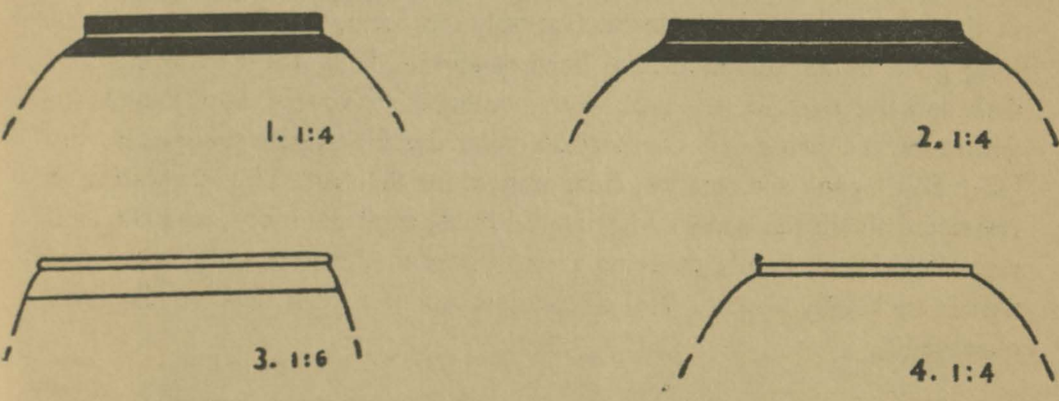


Fig. 7. Kot Diji culture banded pottery

The decoration was confined almost exclusively to a characteristic neck-band; otherwise it was singularly plain. In later stages the neck and the rim became gradually more developed and pronounced, while new decorative elements such as horizontal and wavy lines, single loops, roundels and simple triangular patterns were introduced. These gradually became

multiple and complex, taking the embryonic shapes of such well-known Harappan motifs as fish-scale, intersecting circle and roundel.

The painted decorations were executed with a careful, precise and delicate hand, in sharp contrast with the conventional bold style of the Harappans. The geometric patterns and the bands are solid. Hatched fillings are very rare, and there is no over-crowding of motifs. The overall impression that this ceramic industry creates is one of elegance combined with simplicity.

The principal form is a squat, globular vessel of medium size with short everted or beaded rim. Other forms include dish-on-stand, both squat and long type, thin and delicate vases, flat-based and straight-walled cylindrical vessels, elliptical jars with prominent flange or external ledge for lids, bowls, shallow plates of thin grey fabric, beakers, jar-covers and lids. A small delicate vase with violet neck-band and two balls below it deserves a special mention as a fine specimen of miniature Kot Diji culture pottery.

The dish-on-stand is fairly common in Kot Diji levels, particularly in the late levels of that culture. But only one form, that is with medium-long plain or painted stem, has been observed. It is wheel-turned. The dish and the stem of this type were prepared separately and joined together before firing. In comparison with the Harappan specimens, the 'Kot Diji' types are smaller, finer and more delicate. The decoration is restricted to simple wavy or horizontal lines, multiple loops, and the characteristic broad bands covering a small part of the stem only. Crowded motifs are totally absent. No decoration on the dish has so far been observed.

The typical rimless 'Kot Diji' ware bears affinities with those recovered by Sir Mortimer Wheeler in 1946 from under the mud brick defences at Harappa[143], and also to some extent with those from the lower levels at Amri[144]. Similarity has also been observed with certain types

143 R.E.M. Wheeler, *Ancient India*, No. 3, pp. 91-96, Figs. 8-9, Pl. XL, XLII.
144 J.M. Casal, *Pakistan Archaeologyy*, No. I, p. 63.

collected from the surface of a few prehistoric sites in Baluchistan and Bahawalpur regions which need further study and examination. These parallels sufficiently indicate that this culture was not an isolated and unrelated one; but at present our knowledge about its origin and distribution is certainly very meagre.

CONTRAST BETWEEN 'HARAPPA' AND 'KOT DIJI' POTTERY

The thin and light 'Kot Diji' ware stands in contrast to the thick and heavy 'Harappa' pottery. The contrast in texture, form, and decoration between the normal Harappan pottery and the Kot Dijian ware is so well marked as to indicate a basic difference of ceramic industry. The Kot Diji culture was itself quite mature and well-developed in its own style. Its most characteristic and distinguishing feature appears to me to lie in the delicacy of its form and also in the economy and discipline of its decoration, which was never allowed to become either overcrowded or merely conventional in style. Even the simple bands and lines have been painted with the care and imaginative calculation of an artist. The result is extremely effective.

In later stages this discipline and restriction appears to have been discarded to some extent in an experiment with new decorative motifs.

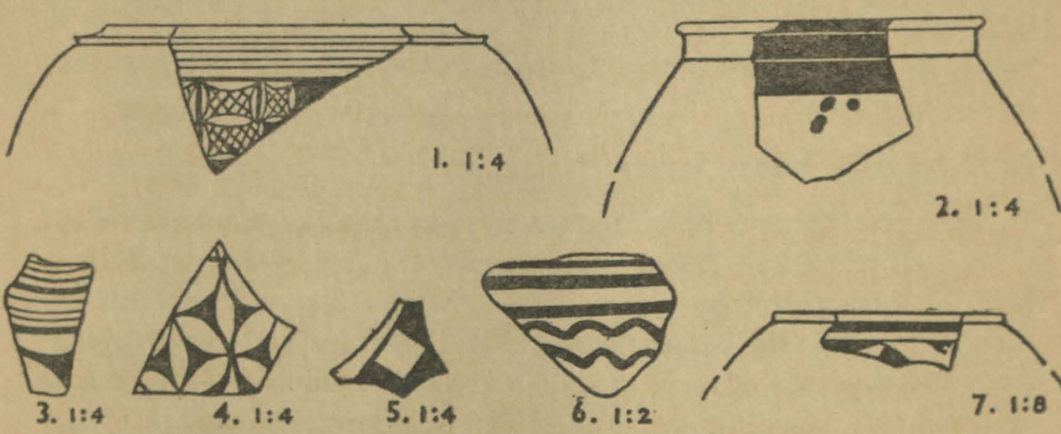


Fig. 8. Kot Diji culture painted pottery

But these were restricted to geometric patterns only. Except a horned deity depicted on a globular pot in black and white on a dark brown glossy slip, no animal, plant or floral design has been observed. In addition to

the usual wide bands in different shades, the new decorative elements include simple and thin horizontal lines combined with single or multiple loops and wavy lines. The multiple loops seem to have developed in the very last stages of this culture into the well-known 'fish-scale' design. A complete vase with this design has been recovered from an upper level of Kot Diji settlement in the outer city.

Similar stages of development are traceable in two other designs: the intersecting circles and balls, not yet linked, which also appear to have influenced the development of Harappan painted patterns.

It has been possible to prepare a typological series on the basis of the study of neck and rim forms of the two largest groups of 'Kot Diji' ware recovered from the excavations: (i) jars, mostly squat and globular, but a few also of elliptical shape, and (ii) bowls. These show the same process of development from simple to complex forms, from almost neckless and rimless shapes to developed forms with prominent neck and rims.

Another class of Kot Diji pottery which shows an interesting difference from the Harappan prototype is the jar lid with a fine solid or ring-knob on top and thick circular black lines or bands round the knob. Painted designs on late specimens show a variant of intersecting circle as well as other geometric patterns such as found on potsherds from late Kot Diji levels.

THE 'KOT DIJI' VERSUS 'HARAPPA' CULTURE

At this stage it is difficult to come to any definite conclusion about the period when Kot Diji was first occupied, nor do we know for how long the sequence of occupations lasted. But there is no doubt that the occupation of the site before the arrival of Harappans must have covered a considerable span of time, as is attested by the 12 to 15 feet high defensive wall and the accumulated depth of buildings which occur in 17 feet of debris.

Excavations have clearly indicated evidence of settled conditions when the Kot Dijians manufactured their well-finished pottery and built their houses in *pise*' and mud-brick on stone foundations. There is no proof

as to the region from which the Kot Dijians arrived in the Indus valley. It is, however, certain that their ceramic product was well distributed, since, as already noticed, some of its forms with straight or everted rim and with the characteristic colour bands at the neck were found at Harappa in 1946 at a depth of about 55 feet underneath the mud-brick defensive wall. Again some of its shapes seem to correspond with certain pottery types of the Amri culture. But this much is certain that Kot Diji pottery has little affinity with the normal Harappa ware. As mentioned elsewhere, stratification has confirmed that the Harappa pottery occurred from layer 1 to 3; in layer 3A this pottery has been found intermingled with the Kot Dijian ware, and the lower layers from 4 to 16 have revealed only the latter type of pottery.

This is a very important and significant feature which clearly indicates that the thick black-on-red ware of the Harappa culture did not originate in the thin pinkish Kot Diji ware. Except for a few forms and simple decorative motifs, which have already been discussed, there is hardly any important feature common to both the industries. The strongest point of contrast is the technical difference. The 'Kot Diji' ware is very light and thin, the Harappan black-on-red ware is thick and heavy. The latter is so hard and well-fired that when struck, it rings with a metallic sound, whereas the former, though well-fired, has the delicacy of certain Baluchi wares.

KOT DIJIANS FORERUNNERS OF THE HARAPPANS

Further investigations and studies must be made before any definite conclusion can be reached about the borrowing or retention of some of the pottery forms and decorative elements of the Kot Dijians by the Harappans.

But the indication is strong that the authors of the new type of pottery were the forerunners of the Harappans in many respects. Though different in form and technique, their ceramic products are in no way less artistic than the sophisticated black-on-red pottery of the Harappans. Well-known pottery types and forms such as the dish-on-stand, shallow plates and small flared-mouth beakers, which are very common in the Harappan period, occur in 'Kot Diji' levels. Terracotta bangles, beads,

cakes and balls are also there. A finely-modelled terracotta bull figurine, different in shape and style from Harappan specimens, is worth mentioning. The stone implements used by the Kot Dijians show great merit; these include cores, flakes, spear-heads, fine leaf-shaped arrow-heads, micro knife-blades and scrapers. The stone arrow-heads, it may be observed, are not a normal Harappan type and thus help further to differentiate the two cultures. In comparison with the Harappan specimens, they show a definite superiority in shape and workmanship.

DISTRIBUTION OF KOT DIJI SETTLEMENTS

An examination of the ceramic material recovered from recent excavations and explorations in Pakistan indicate that Kot Diji culture is not an isolated but widely distributed phase of our prehistory, spread over the Indus valley, Baluchistan and further west to Afghanistan. Affinities of 'Kot Diji' ware were first noticed, as we have already seen, in the pre-Harappan levels below the defences at Harappa by Sir Mortimer Wheeler[145]. This type of pottery has since been traced in the early, pre-Harappan levels at Amri during the recent excavations conducted by Mons. Casal[146]. Earlier, he observed a comparable ceramic type in his excavations at the prehistoric site of Mundigak[147] in the Arghandab valley of Afghanistan, which seems to have some affinities with Kot Diji pottery. It has a broad brown neck-band and there are also multiple loops which occur on Kot Diji painted ware. Some differences in form may perhaps be ascribed to local variations. This discovery in eastern Afghanistan led Mons. Casal to carry on further investigations in the Indus valley, the result of which has been discussed in some details in the following pages of this chapter.

Resemblance of 'Kot Diji' pottery with certain types recovered from the surface of a number of prehistoric sites in the Indus valley and Baluchistan is quite striking. Mention may particularly be made

145 R.E.M. Wheeler, *Ancient India*, No. 3, pp. 91-96.
146 J.M. Casal, *Pakistan Archaeology*, No. I, pp. 57-64; *Fouilles d'Amri*.
147 J.M. Casal, *Fouilles de Mundigak*.

of the prehistoric site of Bhoot[148] in Bahawalpur and Jalilpur in Multan district, and also at Sraduk[149], Kapoto[150] and Spina-Ghundai in Baluchistan. The specimens recovered from Bhoot, Jalilpur and Amri have closer parallels in Kot Diji ware with their characteristic rim and neck-bands, painted wavy lines, squat shape and thin texture. The specimens from Baluchistan also have similar neck bands, but they seem to differ in texture and also, to some extent, in shape and decoration; and since this material is not stratified, it is difficult to come to any definite conclusion about its chronological sequence or the nature and extent of its influence in relation to other contemporary cultures of prehistoric Pakistan.

DATING

The evidence brought to light by the Kot Diji excavations has pushed back the later prehistory of Pakistan by some 300 years. An interesting feature in dating the Kot Diji sequence is the use, for the first time in this area, of modern scientific method. The following Radio-Carbon dates calculated on a half life of 5568 by the Pennsylvania University[151] more or less confirm our provisional dating arrived at by conventional method:

P-195 (Layer 4A, Late Kot Dijian) 3925 B.P. (1975 B.C.) ± 134
P-180 (Layer 5, Late Kot Dijian) 4083 B.P. (2133 B.C.) ± 137
P-179 (Layer 5) 4161 B.P. (2211 B.C.) ± 137
P-196 (Layer 14, Early Kot Dijian) 4421 B.P. (2471 B.C.) ± 141

AMRI CULTURE

Mr. N.G. Majumdar, in the course of a methodical survey in Sind, dug a few trial trenches at Amri in 1929, and thus brought its name for the first time into the scope of prehistoric archaeology. Here he identified a specific class of ceramic industry, which has since been called the 'Amri'

148 F.A. Khan, *Fresh Light on the Ancient Cultures of Baluchistan and Bahawalpur:* Appendix A in Henry Field's *An Anthropological Reconnaissance in West Pakistan*, 1955, p. 192, Figs. 36: 6-8.
149 Ibid. p. 186, Fig. 22 : 6..
150 Ibid. p. 189, Fig. 27 : 3.
151 Elizabeth K. Ralph, *American Journal of Science, Radio-carbon Supplement*, Vol. I, 1959, p. 51.

ware[152]. Found below the Harappan levels, this discovery provided the first stratigraphical evidence of a culture antidating the Indus or Harappan civilization.

Since that time, many new discoveries, particularly those of pre-historic cultures in the lower levels at Harappa[153] and Kot Diji[154], necessitated further investigations at Amri, which was carried out by Mons. J.M. Casal. The site, ravaged by time and floods, now consists of two sizeable mounds only, the higher called Mound A and the lower Mound B. The

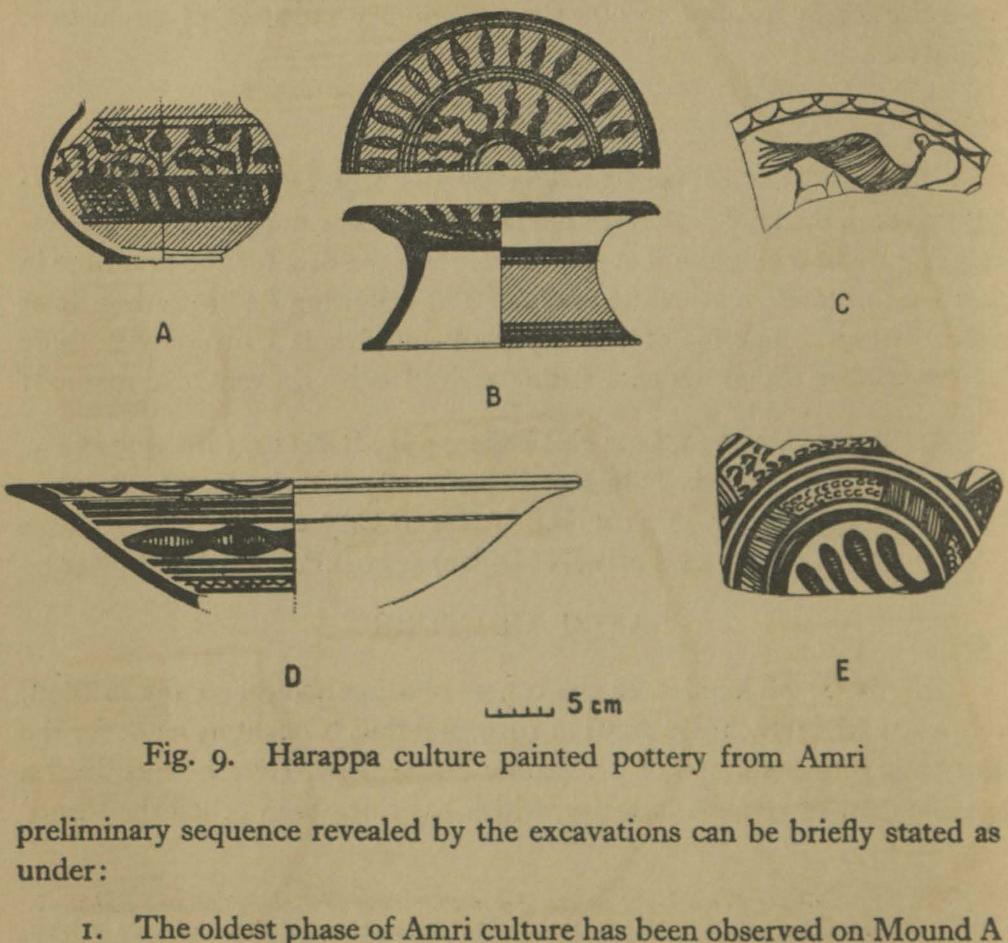


Fig. 9. Harappa culture painted pottery from Amri

preliminary sequence revealed by the excavations can be briefly stated as under:

1. The oldest phase of Amri culture has been observed on Mound A

152 N.G. Majumdar, *Explorations in Sind*, pp. 24-29.
153 R.E.M. Wheeler, *Ancient India*, No. 3, pp. 91-96.
154 F.A. Khan, *Kot Diji*; *Pakistan Archaeology*, No. I, pp. 39-43.

only, whereas subsequent developments have been rcorded on both Mounds A and B.

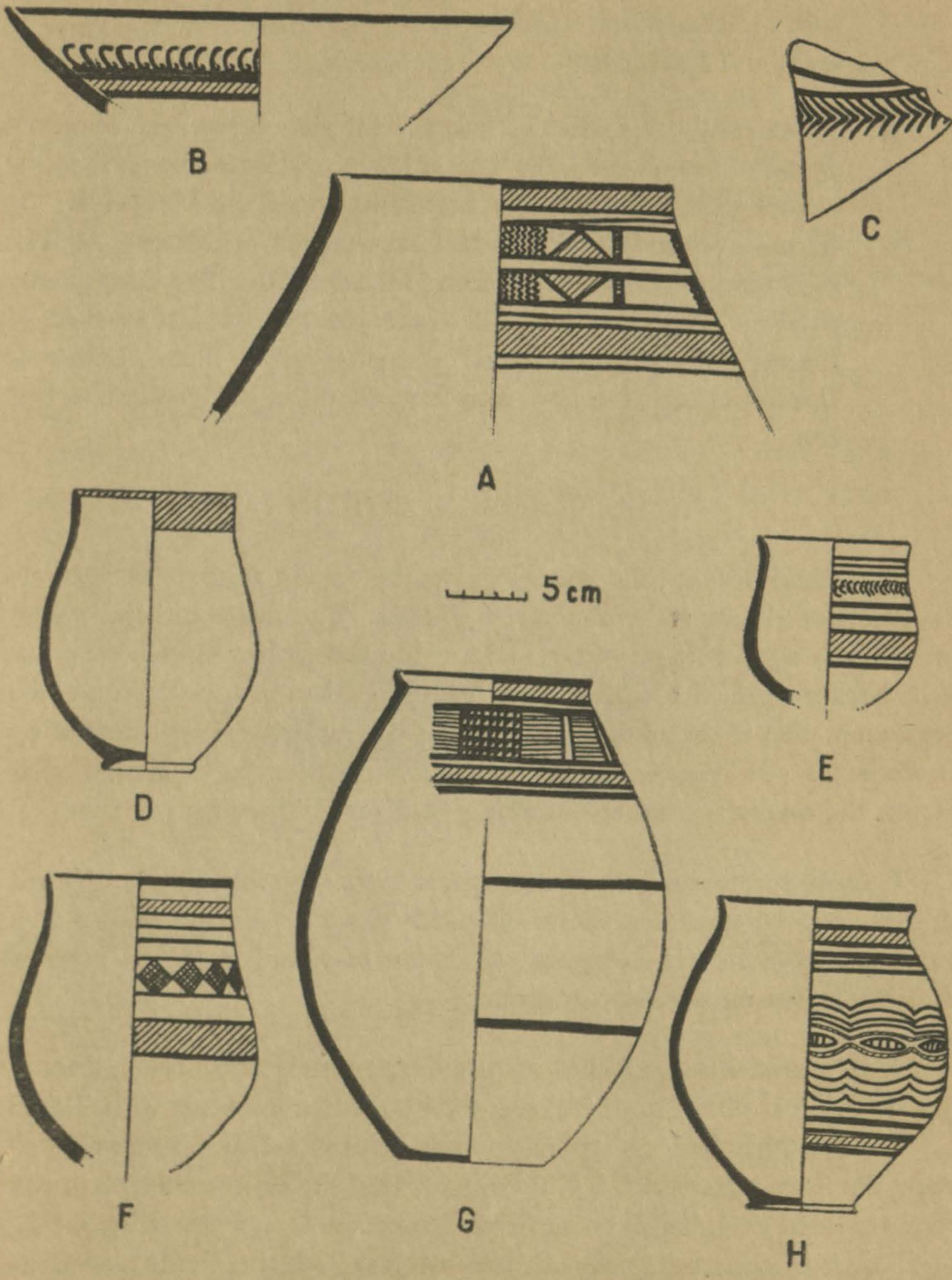


Fig. 10. Amri culture pottery

2. The Intermediate Period, represented on Mound B, witnessed a time when elements of older 'Amri' culture were found alongside a later phase of it, while elements of Indus civilization made their first appearance.

3. Indus civilization, divided into several phases, has been observed on both Mounds A and B. The oldest phase, corresponding to the mature Harappa period, is best represented on Mound B; the second or transitional is better represented on Mound A. The subsequent phases are found on Mound A only. The third closely parallels the upper levels of Mohenjodaro; the last is that of Jhukar, found in disturbed deposits only. Some traces of Jhangar occupation have also been found in the same disturbed area.

AMRI CULTURE POTTERY

The Amri pottery, though recognised by certain permanent features, nevertheless shows an evolutionary process. The characteristic wheel-turned thin ware with geometric patterns in black or brown on a cream or pink background with additional plum or red bands appears from the beginning. But it forms only a minority; the majority is represented by crude handmade vessels with occasional painted designs of similar character, the secondary red colour being used for fillings also.

Animal representations do not appear before the last phase of 'Amri' culture. A good specimen shows a vivid scene of caprids with a dog, but in most cases, a stereotyped stylization of a bull is painted usually in dirty-brown on a yellowish ground.

A few specimens of dishes with radiating crooks and broken lines in the early Amri phase probably suggest its contemporaneity with Togau C. On the other hand, a striking parallel with Kot Diji is noticeable all along the Amri phases. A few Kot Dijian type of rimless vessels with brown or red painted neck-bands occur from the deepest layers onwards, but the similarities increase at the end of the Amri phases, during the Intermediate Period, with more differential forms.

Another interesting feature of the Intermediate Period is the presence of sherds with animal representations of a style alien to the Amri culture. The elongated and striped body unmistakably reminds one of Kulli[155] and Sadaat[156] styles in Baluchistan and that of Mundigak[157], Period IV. 1, in Afghanistan, all of them denoting a strong Iranian influence going back to Susa II.

Coming to Indus period, Harappan phase has been found only on the western portion of the site, now represented by Mound B. The subsequent settlements shifted eastward to Mound A, where late Mohenjodaro and Jhukar remains have been found.

The Jhukar occupation at Amri is represented by many specimens of pottery, unfortunately recovered from a mixed deposit, disturbed by late settlers of the Muslim period. This material shows that from Harappa to Jhukar periods, some older elements disappear as new ones are introduced, but no sharp break is noticeable.



Fig. 11. Bull motifs in 'Late-Amri' culture painted pottery

155 A. Stein, *A.S.I.R.*, 1927-28, p. 113.
156 W.A. Fairservis Jr., *Excavations in the Quetta Valley*. Anthrop. Papers Amer. Mus. Nat. Hist., Vol. 45, pt.2.
157 J.M. Casal, *Fouilles de Mundigak*.

APPENDICES

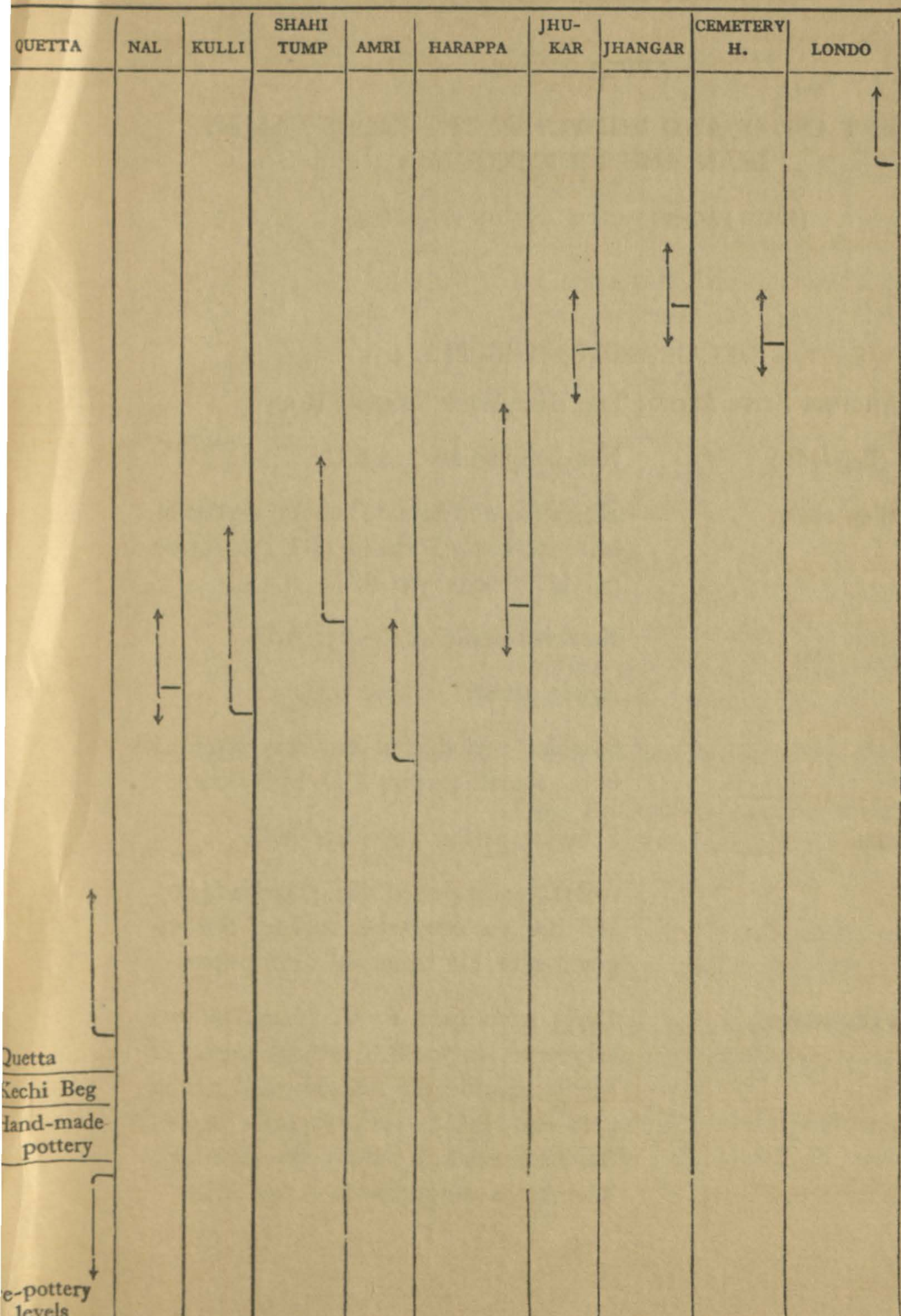
APP…

CHRONO…

Approx. Dates MESOPOTAMIA	HISSAR	SIALK	ANAU	SUSA	GIYAN	BAKUN	ZHOB
800 B.C.		Cemetery B VI					
—1000—							
		Cemetery A V					
Kassite Dyn. 1200							
—1500—							
							R.G. V
I Dyn. of Baby.							Dest.
1700							
1800	IIIC						R.G. IV
2000							
—2200—							Dest.
III Dyn. of Ur		GAP					
Akkad 2300	IIIB		III				
—2400—	IIIA						
III 2600							R.G. III
Early Dyn. II			II	D			
2800							
I							
—2900—							
	IIB						
J. Nasr		IV		C			
—3100—	IIA	III–7 ↑					
	IC		I	B			R.G. II
Uruk	IB						R.G.I.
	IA	↓ III–1		A	V		
—3400—							
		II					
Ubaid							
—3700 B.C.—							
		I					
Halaf							

IX A

AL TABLE


QUETTA
NAL
KULLI
SHAHI TUMP
AMRI
HARAPPA
JHU-KAR
JHANGAR
CEMETERY H.
LONDO
Quetta
Kechi Beg
Hand-made pottery
e-pottery levels

APPENDIX B

ANCIENT CITIES AND ROUTES IN THE INDUS VALLEY, IRAN AND MESOPOTAMIA

(MAPS FACING PAGE 1 AND ON PAGES 6-7)

GEOGRAPHICAL TABLE I

ANCIENT SITES ALONG THE EAST-WEST TRANSIT ROUTE

Baghdad (Bagdadu)	Neo-Babylonian. 500 B.C.
Diyala valley sites	Khafajah, Tell Asmar, Tell Agrab. Proto-historic; Early Dynastic II-III to Agade period. 2800—2300 B.C.
Qasr-i-Shirin	Sasanian period. 226—651 A.D.
Sarpul	Agade period. c. 2300 B.C.
Kirmanshah	Sasanian period. The city was founded in the fourth century A.D. by Varhan.
Tak-i-Bostan	Sasanian period. 226—651 A.D.
Behistun	Achaemenian period. King Darius I (521-486 B.C.) selected this spot for the engraving of his trilingual inscriptions.
Hamadan (Ecbatana)	Dates from 1100 B. C. (Assyrian inscriptions). In 700 B.C. was the capital of Media; during the Achaemenian period (521—485 B.C.) was the summer capital; the Parthians held it from 250—270 B.C. The Arabs conquered it in 645 A.D.

Ray (Chasmah Ali)	Dates from the latest stages of Halaf to the Jemdet Nasr period. 3100—2900 B.C.
Damghan (Hissar)	Hissar I is contemporary with Sialk III, Giyan V.D., Susa A-B and Uruk-Jemdet Nasr periods, c.3400—3100 B.C. Hissar II is equated with Sialk IV, Susa C and Jemdet Nasr, 3100—2900 B.C.
	Hissar III started round about c.2400 B.C. and continued to c.1800 B.C. It is contemporary with Agade period, III Dynasty of Ur and Harappa culture. c.2400—1800 B.C.
Asterabad	Here was found the famous treasure in 1841. The objects suggest contemporaneity with Hissar III. B. C. c.2300—1800 B.C.
Shah Tepe	Three periods: I, II, III. Shah Tepe I started before c.2400 B.C., II is contemporary with Hissar III, and Shah Tepe III is later.
Tureng Tepe	Corresponds with Shah Tepe II.
Anau	Anau I seems to have started in Ubaid period and continued to the end of the Jemdet Nasr time. c.3700—2900 B.C.
	Anau II is contemporary with Early Dynastic period. 2900—2400. B.C.
	Anau III is equated with Agade and the Harappa culture periods. 2400—1800B.C.
Nishapur	The Nishapur ceramic products equate this culture with Anau I, II, and III.

GEOGRAPHICAL TABLE II

Ancient Sites Along The East-West Route Followed By Alexander From Babylon To Iran

Babylon	Dates from First Dynasty of Babylon (Hammurabi). The Kassites, the Assyrians, the Achaemenians, the Greeks and the Parthians all ruled here. Alexander died here in 323 B.C. 1792—323 B.C.
Kish	Corresponds with Jemdet Nasr and Early Dynastic I, II periods. 3000—2600 B.C.
Jemdet Nasr	Settlements, temples, wheel-made painted pottery using black and red paint. The phase is recognizable at Ur, Uruk II-III, Gawrah VII-VIII, Sialk IV, Susa C. Now we approach the recorded history and king-lists of Mesopotamia. It is followed by the period of Early Dynasties. 3100—2900 B.C.
Musyan	Tepe Jaffarabad. Three periods: I corresponds with some phase of Halaf period; II is equated with Ubaid-Uruk; in III, Susa A style pottery appears. Tepe Musyan. Four periods: I is equated with Tepe Jaffarabad I; in II we see pottery with ibex design as in Tall-i-Bakun; III corresponds with Susa A; and IV is contemporary with Susa D and Early Dynastic II. c.3700—2800 B.C.
Susa	Susa is divided into four phases: A, B, C and D. Susa A corresponds with the latest period of Ubaid, early-Uruk, Hissar IA, IB, and Sialk III.1-3.

	Susa B is contemporary with Uruk, Hissar Ic, Sialk III.4-6.
	Susa C is equated with Jemdet Nasr, Hissar II, Sialk III.7 and IV.
	Susa D is contemporary with Early Dynastic period. Before 3400—2400 B.C.
Persepolis	Achaemenian period.
Naksh-i-Rustam	Achaemenian Royal Tombs and Sasanian sculptures.
Istakhr	Sasanian period. (?) Its commencement is attributed to Istakhr, son of Tahumars. (Jackson, Persia. 306).
Pasargade	Achaemenian period. Royal seat of Cyrus and Cambyses.
Tall-i-Bakun	Seems to correspond with Susa A, Anau I and Sialk II. The Tall-i-Bakun pottery with bold 'block' like designs bears resemblance with Quetta ware. It started before 3400 B.C.
Hamadan (Ecbatana)	1100 B.C. — 645 A.D.
Ray (Chasmah Ali)	3100—2900 B.C.
Damghan (Hissar)	c.3400—1800 B.C.
Asterabad	c.2300—1800 B.C.
Shah Tepe Tureng Tepe	As noted in Table I.
Anau	Four cultures. Anau I appears to have started some time in Ubaid period and continued till the end of Jemdet Nasr period. Anau II corresponds with Early

	Dynastic period; Anau III with Hissar III, Shah Tepe II, Tureng Tepe and Harappa culture. Before 3400-1800 B.C.
Nad-i-Ali	Corresponds with Sialk Cemetery B. 1000—800 B.C.
Girdan Reg 6	In southern Seistan. Prehistoric, but it is difficult to determine its chronological position.
Kalat-i-Gird Machi Ram Rud Shahr-i-Sokhta	In southern Seistan. The painted ware suggests some connection with the Quetta culture pottery. Their chronological position remains undetermined.
Dehmorasi Ghundai Said Kala Ghundai	In Qandahar area. They appear to be contemporary with Quetta culture. We are not sure about their chronological sequence.
Taxila	King Darius annexed N.W. part of the Punjab including Taxila in 518 B.C. This also seems to be the probable date for the earliest Taxila city on the Bhir Mound, and the introduction of Aramaic by the Iranians. Alexander captured Taxila in 326 B.C. Then the city passed into the hands of the Scythians in 80 B.C. and the Kushanas in 60 A.D. The White Huns sacked it in 455 A.D.
Chanhudaro	The early culture in Harappa period; it was succeeded by Jhukar and Jhangar cultures. c. 2400—1600 B.C. (?)
Sutkagen-Dor	It was a Harappa culture trading post in southern Baluchistan.

Khurab	The Khurab cemetery appears to be contemporary with Early Dynastic III and some stage of Harappa culture. c.2600—2300 B.C. (?)
Tall-i-Bakun Susa	Contemporary with Susa. Before 3400—2400 B.C.
Babylon	1792—323 B.C.

GEOGRAPHICAL TABLE III

Ancient Sites Along The Arab Trade Routes Between Iran And The Indus Valley

Baghdad	Baghdad, the capital of Iraq was founded as the administrative capital of the Abbasid empire by Caliph Mansur (762—66 A.D.). Five centuries later the Mongols sacked the city.
Diyala valley sites	2800—2300 B.C.
Qasr-i-Shirin	Sasanian period. 226—651 A.D.
Sarpul	Agade period. 2350 B.C.
Behistun	Achaemenian period.
Hamadan (Ecbatana)	1100 B.C.—645 A.D.
Sava	Contemporary with Sialk II. Before 3400 B.C. and after.
Tepe Sialk	Six periods: Sialk I dates back to Hassuna, Nineveh and Halaf periods; Sialk II is difficult to equate with any culture outside Iran; Sialk III corresponds with Hissar I and II, Anau I, Susa

	A, B, Rana Ghundai I, II, Uruk and early Jemdet Nasr period; Sialk IV is equated with Hissar IIb, Susa C, and Jemdet Nasr; Sialk V (Cemetery A) corresponds with some period of Kassite Dynasty; Sialk VI (Cemetery B) is dated between 1000—800 B.C. Before 3700—800 B.C.
Tall-i-Iblis	Near Kerman. The painted pottery suggests connection with Tall-i-Bakun, but it is difficult to determine its chronological position.
Bampur	The incised stone-vessels indicate contemporaneity with Kulli and Early Dynastic period III. Before 2400 B.C.
Chah Husaini	Prehistoric. It is difficult to suggest a period for its existence.
Damin	Seems to be contemporary with Bampur and Shahi Tump.
Katukan	The incised stone-vessels suggest contemporaneity with Bampur, Kulli, and Susa D.
Khurab	Early Dynastic III.
Nazarabad	Prehistoric. Perhaps of the same period as Periano Ghundai.
Zangian	The burial cairns found here are of the same period as at Moghul Ghundai. 1000—800 B.C.
Shahi-Tump	Early Dynastic III and Hissar III b. 2400—2000 B.C.

Kulli-Mehi	The early phase is equated with Early Dynastic II-III, and the later phase with some stage of Harappa culture. 2800—2300 B.C.
Nundara Nal	Their chronological position is difficult to determine, but a mid-second millenium B.C. period is suggested.

GEOGRAPHICAL TABLE IV

Ancient Sites Along The Routes From Baluchistan To Seistan And Meshed

Rana Ghundai	Five periods. R.G.I is comparable in character with Sialk I, which otherwise is earlier than R.G.I. R.G.II seems to be contemporary with Sialk III-5 and Hissar Ic, and Ninevite V. R.G.III is equated with Sur-Jangal II, Periano Ghundai, Moghul Ghundai and early phase of Dabar Kot. There are no outside parallels for R.G.IV and V.
Sur-Jangal	Two phases: the early is equated with R.G. II and the later with R.G. III and Periano Ghundai.
Dabar Kot	Three levels. The early period is comparable with R.G. III, the intermediate with some stage of Harappa culture, and the last has Sosiana remains.
Periano Ghundai	Corresponds with R.G. III.
Moghul Ghundai	Two phases: the early is equated with R.G. III; and the later may be contem-

	porary with Sialk VI, Cemetery B. 1000—800 B.C.
Kili Gul Mohammad	Neolithic pre-pottery stage is comparable with the pre-pottery levels of Jericho and Jarmo. The hand-made pottery culture above that may perhaps be compared with R.G.I.
Kechi Beg	Appears to be contemporary with Amri.
Damb Sadaat (Quetta Ware)	It is no more the earliest ware of Baluchistan; it now occupies a middle position in the chronological sequence of the Quetta valley cultures. The pottery is comparable with that of Tall-i-Bakun.
Dehmorasi Ghundai Said Kal Ghundai	In Qandahar area. The pottery from these sites is comparable with Quetta ware. It is difficult to determine their chronological sequence.
Gardan Reg 6 Kalat-i-Gird Machi Ram Rud Shahr-i-Sokhta	All these sites are in southern Seistan. The painted pottery from these sites suggests some relationship with the Quetta ware, but we are not certain, as the material is unstratified.
Malik Siah Kuh	Remains of Sasanian period.
Nad-i-Ali	Contemporary with Sialk Cemetery B. 1000—800 B.C.
Nishapur	The ceramic remains are equated with those from Anau I, II, III. Before 3400—2000 B.C.

APPENDIX C

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APPENDIX D

BIBLIOGRAPHICAL REFERENCES TO ILLUSTRATIONS

PLATE XXI. b.

COPPER AND BRONZE MIRRORS FROM KULLI, MOHENJODARO, HISSAR AND SUSA

Kulli

1. Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XXXII. Mehi. II.2.1.a.
2. ibid.	Pl. XXXII. Mehi. III.6.5.

Harappa

3. Mackay. F.M.D.	Pl. CXVIII. 10.
4. Wheeler. Harappa. Ancient India. 3.	Pl. L.II.c.

Hissar

7. Schmidt. Hissar.	Pl. LIV.H.4872.

Susa

5. M.D.P. Vol. XIII.	Fig. 33.
6. ibid. Vol. XXV. p. 212.36.	
8. ibid. Vol. XIII. p. 189.12.	

PLATE XXII

PAINTED POTTERY FROM RANA GHUNDAI, HISSAR AND SIALK

RANA GHUNDAI II POTTERY WITH 'BULL' AND 'BLACKBUCK' DESIGNS

3. Ross. A Chalcolithic site in N. Bal.
   J.N.E.S. Vol. V. Pl. XXII.1.
6. American Museum Novitates, No. 1587, p. 20.

10. Gordon Collection. Twin Mounds. 51/1917 (In the Institute of Archaeology, London).
15. Stein. Baluchistan (M.A.S.I. No. 37). Pl. XXI.S.J.IV. 4.
16. ibid. Pl. XIII.M.K.2.
20. Ross. A Chalcolithic site in N.Bal. J.N. E.S. Vol. V. Pl. XII.2.

HISSAR I.C. AND SIALK III-5. PAINTED POTTERY WITH GOAT AND IBEX DESIGNS

Hissar

1 & 14. Schmidt. Hissar. Pl. VII. H.4600.
4 & 12. ibid. Pl. VII. H.4544.
13 & 22. ibid. Pl. XI H.4695.

Sialk

2. Ghirshman. Sialk. Pl. LXX.S. 155.
17. ibid. Pl. LXXXI.A.1.
19. ibid. Pl. LXXX.D.8.

PAINTED POTTERY FROM RANA GHUNDAI, PERIANO GHUNDAI AND SUR-JANGAL

5. Stein. Baluchistan (M.A.S.I. No. 37). Pl. XX.S.J. 25.
7. Gordon Collection. Sur-Jangal. 51/1924
8. Stein. Baluchistan (M.A.S.I.No.37). Pl. VIII.P.SW.4.
9. ibid. Pl. XIII.R.G.22.
11. Ross. ibid. Pl. IX.6.
18. Stein. Baluchistan (M.A.S.I. No. 37). Pl. XI.M.M.E. 14.
21. Ross. A Chal. Site in N. Bal. Fig. 4.11.

PLATE XXIII

Painted Designs On Pottery From Quetta Region, Seistan, Tall-i-Bakun, Susa And Giyan

Diagonal Stepped Motif

1. Piggott. Ancient India. No. 3. Fig. 2.13.
2. ibid. Fig. 2.1.

3.	Langsdorff. Tall-i-Bakun.	Pl. 43.7.
6.	Pumpelly. Turkestan.	Fig. 135. Pl.32.1.
16.	Langsdorff. Tall-i-Bakun.	Pl. 54.14.
23.	Contenau. Giyan.	Pl. 42.
24.	Stein. Innermost Asia.	Pl. CXIII. SS. 04.8.

Zig-zag Lines

4.	Stein. Innermost Asia.	Pl. CXIV.SS. 05.
9.	Langsdorff. Bakun.	Pl. 24.15.
11.	Herzfeld. Iran.	Pl. XIII.
15.	Contenau. Giyan.	Pl. 56.4.
17.	Piggott. Ancient India. No.3.	Fig. 3.22.
21.	ibid.	Fig. 3.21.
22.	Stein. Innermost Asia.	Pl. CXIII.R.R. XIX. 018.
25.	M.D.P. Vol. XIII.	Pl. IX.5.

Stepped Motif

7.	M.D.P. Vol. XIII.	Pl. VIII.6.
8.	Piggott. Ancient India. No. 3.	Fig. 3.32.
14.	M.D.P. Vol.VIII.	Fig. 165.
18.	Piggott. Ancient India. No. 3.	Fig. 3.29.
19.	Herzfeld. Iran.	Fig. 45.
20.	ibid.	Fig. 45.

Diagonally-divided Squares

5.	M.D.P. Vol. VIII.	Fig. 160.
10.	Langsdorff. Bakun.	Pl. 26.6.
12.	Piggott. Ancient India. No. 3.	Fig. 3.34.
13.	Contenau. Giyan.	Pl. 45.2.

PLATE XXIV

Painted Designs On Pottery From Quetta Region, Seistan, Tall-i-Bakun And Susa

'Fringed Band'

1.	Piggott. An. Ind. No. 3.	Fig. 5.59.

2.	Langsdorff. Bakun.	Pl. 34.1.
3.	M.D.P. Vol. VIII.	Fig. 158.
4.	Stein. Innermost Asia.	Pl. CXIII.R.R. XVII. 08.
6.	ibid.	Pl. CXIII.SS. 074.
13.	ibid.	Pl. CXIII. Machio/o.001.

Cross Zig-zags

7.	Piggott. An. Ind. No. 3.	Fig. 6.61.
8.	Langsdorff. Bakun.	Pl. 55.1.
9.	ibid.	Pl. 55.2.
10.	Stein. Innermost Asia.	Pl. CXIII.SS.015.
11.	ibid.	Pl. CXIII.SS.O.5.O.
12.	ibid.	Pl. CXIII.SS.026.

'White on Black Steps'

14.	Piggott. An. Ind. No.3.	Fig. 6.60.
15.	Langsdorff. Bakun.	Pl. 25.14.
16.	ibid.	Pl. 39.5.

Cross-hatching

17.	Piggott. An. India. No.3.	Fig.4.48.
18.	Langsdorff. Bakun.	Pl. 67.11.

Spiky-Tree-Design

5.	Piggott. An. India. No. 3.	Fig. 5.56.
19.	Langsdorff. Bakun.	Pl. 45.2.
20.	M.D.P. Vol. XIII.	Pl. V.2.

PLATE XXV

Painted Pottery From Quetta Valley: Terracotta Figurines From Zhob Valley And Kandahar Area

PAINTED POTTERY FROM QUETTA VALLEY CULTURES

Damb Sadaat Ware

1.	American Museum Novitates.	No. 1587. P.11.H.
2.	ibid.	P.11.F.
3.	ibid.	P.11.J.

PLATE XXXII

Painted Pottery From Amri, Harappa, Jhukar, Jhangar And Cemetery 'h'

Amri Painted Pottery

1.	Majumdar. Sind (M.A.S.I. No.48).	Pl. XXXVIII.1.
2.	ibid.	Pl. XXXVIII.5.
3.	ibid.	Pl. XXXVIII.8.
4.	ibid.	Pl. XXXVIII.10.
5.	ibid.	Pl. XXXVIII.13.
15.	ibid.	Pl. XXXVIII.20.

Harappa Painted Pottery

6.	Majumdar. Sind (M.A.S.I.No.48).	Pl. XXVI.27.
7.	Marshall. M.D.	Pl. XC. 23.
8.	Mackay. Ch.D.	Pl. XXXVI.37.
9.	ibid.	Pl. XXXIII.1.
27.	Marshall. M.D.	Pl. XCII.5.

Jhukar Painted Pottery

10.	Mackay. Ch.D.	Pl. XLII.11.
11.	ibid.	Pl. XLIII.3.
12.	ibid.	Pl. XLIII.8.
13.	ibid.	Pl. XLIV.14.
18.	ibid.	Pl. XLIV.15.
19.	ibid.	Pl. XLI.38.

Jhangar Incised Pottery

24.	Mackay. Ch.D.	Pl. XXXIX.11.
25.	ibid.	Pl. XXXIX.6.
26.	ibid.	Pl. XXXIX.8.
28.	ibid.	Pl. XXXIX.4.
29.	ibid.	Pl. XXXIX.7a.
30.	ibid.	Pl. XXXIX.5.

Harappa Cemetery 'H' Pottery

14.	Vats. Harappa.	Pl. LXII.11.
16.	ibid.	Pl. LXII.5.
17.	ibid.	Pl. LXII.2.
20.	ibid.	Pl. LIX.2.
21.	ibid.	Pl. LIX.3.
22.	ibid.	Pl. LXI.9.
23.	ibid.	Pl. LXI.12.

PLATE XXXIII

Pottery And Other Objects From Sur-Jangal, Periano Ghundai And Seistan

CARAFE-LIKE VASES FROM SUR-JANGAL, PERIANO GHUNDAI AND NAL

1.	Stein. Baluchistan (M.A.S.I.No.37).	Pl. XX.S.J.I.C.
2.	ibid.	Pl. VII.P.SW.b.1.
3.	ibid.	Pl. VII.P.SW.b.2.
4.	Hargreaves. Nal (M.A.S.I.No.35).	Pl. XIX. 13.

PERIANO GHUNDAI AND SEISTAN POTTERY AND OTHER OBJECTS

Periano Ghundai

5.	Stein. Baluchistan (M.A.S.I.No.37).	Pl. V.p.39.
6.	ibid.	Pl. VII.P.E.1.
7.	ibid.	Pl. IX.P.SW.C.26.
8.	ibid.	Pl. VII.P.C.18.

Seistan

9.	Stein. Innermost Asia. p.466.	Fig. 40.469.
10.	ibid.	Pl. CXIV.
11.	ibid.	Pl. CXIV.
12.	ibid.	Pl. CXII.
13.	ibid.	Pl. CXII.
14.	ibid.	Pl. CXII.

PLATE XXX

Common Painted Pottery Types From Shahi Tump And Susa

1.	M.D.P. Vol. XIII.	Pl. IX.2.
2.	ibid.	Pl. VII.5.
3.	Stein. Gedrosia (M.A.S.I. No.43).	Pl. XVII. Sh.T.XI.4.a.
4.	ibid.	Pl. XVIII. Sh.T.VII.Ic.
5.	M.D.P. Vol. XIII.	Pl. IX.9.
6.	Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XIX. Sh.T.XIV.d.
7.	Eliot. Susa Exhibit.	VI. 11.3.
8.	ibid.	III.7.
9.	Puttier. Corpus Vasorum Antiquarum.	Pl. XII.47.
10.	M.D.P. Vol.XIII.	Pl. XX.2.
11.	Stein. Gedrosia (M.A.S.I. No.43).	Pl. XVII. Sh.T.VI. 13.h.
12.	ibid.	Pl. XIX. Sh.T. IX. 2.c.
13.	ibid.	Pl. XVII. Sh.T.VII.17.e.
14.	Stein. Baluchistan.	Pl. VII. P.S.W.b.1.
15.	Stein. Gedrosia,	Pl. XIX.Sh. T.VII. 1.a.
16.	M.D.P. Vol.XXX.	Fig. 21.9.
17.	Stein. Gedrosia.	Pl. XV.Sh.T.VI. 13. d.
18.	ibid.	Pl. XVII. Sh.T.VIII.2.
19.	ibid.	Pl. XVI.Sh.T.XIV. f.4.
20.	M.D.P. Vol.XIII.	Pl. XVII.4.
21.	ibid. M.D.P. Vol. XIII.	Pl. XIV.4.
22.	ibid.	Fig. 177.
23.	Stein. Gedrosia (M.A.S.I. No.43)	Pl. XVII. Sh.T.VII.3.5.b.
24.	ibid.	Pl. XVII.Sh.T.VI.15.b.

PLATE XXXI

Painted Pottery From Dabar Kot, Periano Ghundai And Harappa Sites

PAINTED POTTERY AND FIGURINES FROM DABARKOT AND PERIANO GHUNDAI

Dabar Kot

1. Stein. Baluchistan (M.A.S.I. No.37). Pl. XV. D. N. C. 2.

2.	Stein. Baluchistan (M.A.S.I. No.37).	Pl. XIV.D.8.
3.	ibid.	Pl.XV.D.W.1.2.
4.	ibid.	Pl. XIV.D.17.
5.	ibid.	Pl. XV.D.N.b.5.
6.	ibid.	Pl. XVI.D.K.d.9.

Periano Ghundai

7.	Stein. Baluchistan (M.A.S.I. No.37).	Pl. VII.P.S.W.b.4.
8.	ibid.	Pl. V.p.2.
9.	ibid.	Pl. V.p.13.
10.	ibid.	Pl. V.p.35.
11.	ibid.	Pl. V.p.22.
12.	ibid.	Pl. IX.p.262

PAINTED POTTERY AND SEALS FROM DABARKOT AND HARAPPA CULTURE SITES

Dabar Kot

13.	Stein. Baluchistan (M.A.S.I.No.37).	Pl. XV.D.N.b.12.
14.	ibid.	Pl. XV.D.N.C.7.
15.	ibid.	Pl. XIV.D.18.
16.	ibid.	Pl. XIV.D.W.1.11.16.
17.	ibid.	Pl. XVI.D.N.d.28.
18.	ibid.	Pl. XV.D.58.

Harappa Culture

19.	Mackay. Ch.D.	Pl. XXX.23.
20.	Vats. Harappa.	Pl. XCV.390.
21.	Marshall. M.D.	Pl. CXIV.528.b.
22.	Mackay. Ch.D.	Pl. XXXVII.11.
23.	ibid.	Pl. XXXI. 20.
24.	ibid.	Pl. XXXI.21.
25.	ibid.	Pl. XXX.17.

4.	M.D.P. Vol. XIII.	Fig. 131.
5.	ibid.	Pl. XVI.
6.	Schmidt. Hissar (1C).	Pl. XIII. DH. 34.11.2.
7.	Langsdorff. Bakun.	Pl. 4.4.
8.	Marshall. M.D.	Pl. XCII. 20.
9.	Majumdar. Sind. Chanhudaro.	Pl. XX.9.
10.	M.D.P. Vol. VIII. p.125.	Fig. 228.
11.	Stein. Arch. Reconn.	Pl. XI.Kat.011.
12.	M.D.P. Vol. VIII. p.119.	Fig. 209.
13.	Stein. Arch. Reconn.	Pl. XI.A.75.
14.	ibid.	Pl. XVII.B.1.122.
15.	Langsdorff. Bakun.	Pl. 70.5.
16.	Stein. Persis. Iraq III.	Pl. XXIII.88.
17.	ibid.	Pl. XXIV.7.
18.	ibid.	Pl. XXIV.8.
19.	ibid.	Pl. XXV.15.
20.	Stein. Arch. Reconn.	Pl. VII.A.392.
21.	Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XXII. Kul. IV.1.
22.	ibid.	Pl.XXVIII. Mehi.1.1.6.
23.	Majumdar. Sind (M.A.S.I. No.48). Karchat.	Pl.XXXII. 19.
24.	ibid. Shahjo-Katiro.	Pl. XXXIII.39.
25.	ibid. Ghazishah.	Pl. XXVII.4.

PLATE XXVIII

Scarlet Ware From Kulli, Susa And Mesopotamia

Kulli Culture

2.	Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XXX. Mehi. 11.4.5.
3.	Gordon Collection. Siah Dumb.	50/2556.
6.	Stein. Gedrosia (M.A.S.I.No. 43).	Pl. XXX. Mehi. IV. 1.1.
8.	ibid.	Pl. XXII. Kul. 1. VII. 1.

Susa

1.	M.D.P. Vol. XXIX. p.105.	Fig. 1.
4.	ibid. Vol. XIII.	Fig. 168.

Mesopotamia

5.	Delougaz. Pottery from the Diyala.	Pl. 9.Kh.VI.69.
7.	ibid.	Pl. 12. AG. 36.580.
9.	ibid.	Pl. 11. AG.35. 1032.

PLATE XXIX

Common Pottery Types From Shahi Tump, Khurab And Susa

1.	M.D.P. Vol. XIII.	Pl. XXVII.1.
2.	ibid.	Pl. XXVII.2.
3.	Stein. Gedrosia (M.A.S.I. No.43).	Pl. XIX. Sh.T.VI.13.b.
4.	Stein. Arch. Reconn.	Pl. XIII. KHUR.B.11.199.
5.	Mackay. Ch.D.	Pl. XXXIX.
6.	Stein. Gedrosia.	Pl. XIII. Sh.T. VI.3.
7.	M.D.P. Vol.XIII.	Pl. XXXII.
8.	Schmidt. Hissar.	Fig. 33.
9.	M.D.P. Vol. XIII.	Pl. XII.
10.	Stein. Gedrosia.	Pl. XVI. Sh.T. VI. 14.e.
11.	M.D.P. Vol. XIII.	Pl. XI.
12.	Stein. Baluchistan.	Pl. VII. P.SW. 16.
13.	Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XVIII.Sh.T. VII.1.b.
14.	ibid.	Pl. XVIII. Sh.T. IX. 2.b.
15.	Stein. Gedrosia.	Pl. XIII. Sh.T.VI.14.a.
16.	M.D.P.Vol. XIII.	Fig. 46. 20.

Quetta Ware

4.	American Museum Novitates.	No. 1587. P.11.D. (Karez).
5.	ibid.	P.11.E. (Damb Sadaat).
6.	ibid.	P.11.F. (ibid).
7.	ibid.	P.11.G. (ibid).
10.	ibid.	P.11.C. (ibid).

Kechi Beg Ware

8.	American Museum Novitates.	No. 1587. P.11.A. (Damb Sadaat).
9.	ibid.	P.11.B. (ibid)

ZHOB TYPE MOTHER GODDESS FIGURINES FROM DAMB SADAAT AND DEH MORASI IN KANDAHAR AREA

11.	American Museum Novitates.	No. 1587. P.14.A. (Damb Sadaat).
12.	ibid.	P.14.B. (ibid).
13.	ibid.	P.14.C. (Sur-Jangal).
14.	ibid.	P.14.F. (Damb Sadaat).

PLATE XXVI

Painted Pottery From Nal And Susa

1.	Hargreaves. Nal (M.A.S.I. No. 35).	Pl. XVIII.16.
2.	ibid.	Pl. XVIII. 17.
3.	ibid.	Pl. XIX. 2.
4.	M.D.P. Vol. XIII.	Pl. XIX.3.
5.	ibid.	Pl. XIX.8.
6.	ibid.	Fig. 5.
7.	ibid.	Fig. 7.

Intersecting Circle Design

8.	Hargreaves. Nal.	Pl. XX.d.
9.	Marshall. M.D.	Pl. XC.22.

10.	Mallowan. Chagar Bazar. Iraq. III.	Pl. 11.2.
11.	Schmidt. Tell Halaf.	Pl. LI.8.
12.	ibid.	Pl. LI.7.

OTHER COMMON DESIGNS ON THE POTTERY OF NAL, MUSYAN AND SUSA

13.	Hargreaves. Nal. (M.A.S.I. No.35).	Pl. XVII.51.
14.	ibid.	Pl. XVII.6.
15.	ibid.	Pl. XVII.7.
16.	ibid.	Pl. XVII.4.
17.	ibid.	Pl. XVII.55.
18.	M.D.P. Vol. XXX. p. 212.	Fig. 52.8.
19.	M.D.P. Vol. VIII.	Fig. 147.
20.	ibid.	Fig. 149.
21.	ibid.	Fig. 165.
22.	ibid.	Fig. 166.
23.	Hargreaves. Nal.	Pl. XVIII. 12.
24.	M.D.P. Vol. XIII.	Pl. XLI.5.
25.	Marshall. M.D.	Pl. XC.21.
26.	M.D.P. Vol. XIII.	Pl. X.7.
27.	Hargreaves. Nal.	Pl. XVII. 15.
28.	Majumdar. Sind (M.A.S.I.No. 48).	Pl. XXVII.29.
29.	M.D.P. Vol. XIII.	Pl. XVIII. 5.
30.	ibid.	Pl. XIX.
31.	Hargreaves. Nal.	Pl. XXI. 6.
32.	M.D.P. Vol.XXX. p.214.	Fig. 53.6.

PLATE XXVII

Painted Pottery With Ibex And Goat Motif From Iran, Baluchistan And The Indus Valley

1.	Schmidt. Hissar (1 B).	Pl. V.
2.	Ghirshman. Sialk (III).	Pl. LXX. S.97.
3.	ibid.	Pl. LXXXI. B.5.

PLATE XXXIV

Pottery from Moghul Ghundai And Periano Ghundai. Toilet Articles From Moghul Ghundai And Sialk Cemetery B

PAINTED POTTERY FROM MOGHUL GHUNDAI AND PERIANO GHUNDAI

Moghul Ghundai

1.	Stein. Baluchistan (M.A.S.I. No. 37).	Pl. XI.M.M.N.4.
2.	ibid.	Pl. XI.M.M.N.37.
3.	ibid.	Pl. XI.M.M.N.31.
4.	ibid.	Pl. XI.M.M.N.22.

Periano Ghundai

5.	Stein. Baluchistan (M.A.S.I. No.37).	Pl. VI.p.89.
7.	ibid.	Pl. VII.P.S.W.b.2.
13.	ibid.	Pl. V.p.23.
14.	ibid.	Pl. V.p.41.

TOILET REQUISITES FROM MOGHUL GHUNDAI AND SIALK CEMETERY B

Moghul Ghundai

6.	Stein. Baluchistan (M.A.S.I.No. 37).	Pl. XII.M.VII.a.
8.	ibid.	Pl. XII.M.VI.
10.	ibid.	Pl. XII.M.N.W.XVII.
11.	ibid.	Pl. XII.M.N.W.1.

Sialk Cemetery B. Tomb 123

9.	Ghirshman. Sialk (VI). Vol.II.	Pl. LXXIX. S. 988.a.
15.	ibid.	Pl. LXXIX.S. 991.a.
16.	ibid.	Pl. LXXIX.S. 988.b.
17.	ibid.	Pl. LXXIX.S. 980.a.
18.	ibid.	Pl. LXXIX.S. 990.b.
19.	ibid.	Pl. LVI.S. 823.

PLATE XXXV

POTTERY AND FEEDING CUPS FROM HARAPPA, HISSAR, SHAH TEPE, ANAU AND KHAFAJAH

DISH-ON-STAND

Harappa

1.	Marshall. M.D.	Pl. LXXIX.4.
6.	ibid.	Pl. LXXIX.21.
7.	ibid.	Pl. LXXIX.17.
18.	ibid.	Pl. LXXIX.5.

Hissar

2.	Schmidt. Hissar.	Pl. XXVI.
3.	ibid.	Pl. LIX.
5.	ibid.	Fig. 67.
10.	ibid.	Pl. LIX.

Shah Tepe

4.	Arne. Shah Tepe.	Pl. LXXV.
11.	ibid.	Pl. XXXI.

Anau

12.	Pumpelly. Turkestan.	Pl.XI.6.

Khafajah

8.	Frankfort .O.I.C. No. 20.	Fig. 34.
19.	ibid.	Fig. 33.

FEEDING CUPS

9.	Pumpelly. Turkestan.	Pl. IX. 1.
13.	Arne. Shah Tepe.	Fig. 406.
14.	Mackay. F.M.D.	Pl. LXVI. 2.
15.	Schmidt. Hissar.	Pl. XXXVIII.
16.	Woolley. Ur. Vol. VIII.	Pl. LXX.
17.	Schmidt. Hissar.	Pl. LIX.

PLATE XXXVI

PERFORATED AND KNOBBED WARE

PERFORATED HEATERS

1.	Mackay. F.M.D.	Pl. XXXIV.
2.	Wulsin. Tureng Tepe.	Pl. XIII.
3.	Arne. Shah Tepe.	Pl. LV.
4.	ibid.	Pl. LV.
5.	Schmidt. Hissar.	Pl. XXXVI.
6.	ibid.	Pl. XLIII.

KNOBBED WARE

7.	Marshall. M.D.	Pl. LXXVIII.16.
8.	ibid.	Pl. LXXVIII.16.
9.	ibid.	Pl. LXXVIII.16.
10.	Schmidt. Hissar.	Pl. XXVI.
11.	Arne. Shah Tepe.	Pl. XLIII.
12.	Frankfort. O.I.C.	No. 17. p. 18.
13.	Contenau. Giyan.	Pl. XIV.6.

PLATE XXXVII

COMMON DESIGNS ON THE PAINTED POTTERY OF THE HARAPPA AND IRANIAN CULTURES

Triangles

1.	Marshall. M.D.	Pl. XCII.10.
2.	ibid.	Pl. XCII.18.
3.	M.D.P. Vol.XIII.	Pl. VI.1.
4.	M.D.P.Vol.VIII.	Pl. VII.Fig. 155.
5.	Ghirshman. Sialk I.	Pl. LXXII.S. 150.
7.	Pumpelly. Turkestan.	Pl. XXVIII. P.130. Fig.82.

Chequers

6.	Langsdorff. Tall-i-Bakun.	P.37.4.
8.	Ghirshman. Sialk I.	Pl. LXXX. C.14.

9.	Marshall. M.D.	Pl. XCII.13.
10.	ibid.	Pl. XCII.11.
11.	ibid.	Pl. XCII.12.
20.	M.D.P. Vol. VIII.	Fig.167.

Comb Motif

12.	M.D.P. Vol.XIII.	Pl. XV.
13.	Contenau. Giyan.	Pl. 33.
14.	Ghirshman. Sialk I.	Pl. L.A.2.
15.	ibid.	Pl. XLVIII. D.12.
17.	ibid.	Pl. XLV. S.1552.
24.	Marshall. M.D.	Pl. XCI.13.
25.	Majumdar. Sind (M.A.S.I. No.48).	Pl. XXVIII.40.
26.	Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XXIII. Kul. V.VII.2.

Zig-zag Borders

16.	M.D.P. Vol.XIII.	Pl.IV and V.
18-19.	M.D.P. Vol. VIII.	p. 125.
27.	Hargreaves. Nal.	Pl. XVIII.10.
28.	Pumpelly. Turkestan.	Pl. 22.5.

The V—Motif

21.	Marshall. M.D.	Pl. XCII.8.
22.	ibid.	Pl. XCII.17.
23.	M.D.P. Vol.XIII.	Pl. XXVII.4.

PLATE XXXVIII

Painted Pottery From Kulli; Incised Stone Vessels From Kulli, Shahi Tump, Mohenjodaro, Bampur Valley, Susa And Mesopotamia

KULLI CULTURE PAINTED POTTERY

1.	Stein. Gedrosia (M.A.S.I. No.43).	Pl. XXX. Mehi. IV. 1.1.
2.	ibid.	Pl. XXX. Mehi. III.1.6.3.

3. Stein. Gedrosia (M.A.S.I. No. 43).	Pl. XXV. Kul.1.VIII.2.
4. ibid.	Pl. XXI. Kul.1. III.2.
5. ibid.	Pl. XXIX. Mehi. III.2.5.
6. ibid.	Pl. XXII. Kul.1. VIII.1.

SPIKY TREE MOTIF ON THE PAINTED POTTERY OF KULLI, HARAPPA AND SUSA

10. A.R.A.S.I. Harappa. 1927-28.	Pl.XXXV.g.
11. M.D.P. Vol. XIII.	Pl. V.2.
20. Stein. Gedrosia. (M.A.S.I.No.43).	Pl. XXIX. Mehi II. 2.5.

INCISED STONE VESSELS

Kulli Culture

8. Stein. Gedrosia (M.A.S.I.No.43).	Pl. XXX. Mehi. II.1.3.
17. ibid.	Pl. XXVIII. Mehi. I.6.4.

Shahi-Tump Culture

15. Stein. Gedrosia (M.A.S.I.No.43).	Pl. XIII. Sh.T.III.9.

Harappa Culture

16. Marshall. M.D.	Pl. CXXXI. 37.

SOUTH-EAST IRAN

Bampur Valley

9. Stein. Arch. Reconn.	Pl. VI. Kat. 019.	Pottery.
12. ibid.	Pl. VI.Bam.A.161.	Pottery.
23. ibid.	Pl. VI.Khur.F.1.263.	

SOUTH-WEST IRAN

Susa

7. M.D.P. Vol.XII. 69.

Mesopotamia

13. Frankfort. O.I.C. No.19.	Fig. 56.
14. Herzfeld. Iran.	Pl. VII.
19. ibid.	Fig. 178.
21. ibid.	Fig. 178.
22. ibid.	Fig. 178.

PLATE XLIII

Harappa Culture Pottery From Amri

1.	Casal. Fouilles d'Amri. Vol. II.	Fig. 75. III A. 320.
2.	ibid.	Fig. 78. III A. 342a.
3.	ibid.	Fig. 78. III A. 342.
4.	ibid.	Fig. 72. II B. 304.
5.	ibid.	Fig. 77. III A. 334.
6.	ibid.	Fig. 77. III A. 337.
7.	ibid.	Fig. 76. III A. 326.
8.	ibid.	Fig. 77. III A. 336.
9.	ibid.	Fig. 78. III A. 340.
10.	ibid.	Fig. 78. III A. 343.
11.	ibid.	Fig. 75. III A. 318.
12.	ibid.	Fig. 75. III A. 323.

PLATE XLIV

'Amri' And 'Late Amri' Culture Pottery From Amri

1-2.	Casal. Fouilles d'Amri Vol. II.	Fig. 63. ID. 208.
3.	ibid.	Fig. 62. ID. 205.
4.	ibid.	Fig. 57. IC. 162.
5.	ibid.	Fig. 50. IB. 102.
6.	ibid.	Fig. 64. ID. 212.
7.	ibid.	Fig. 67. IIA. 252.
8.	ibid.	Fig. 62. ID. 207.
9.	ibid.	Fig. 56. IC. 159.
10.	ibid.	Fig. 55. IC. 149.
11.	ibid.	Fig. 39. IA. 10.
12.	ibid.	Fig. 64. ID. 214.

PLATE XLV

Terracotta Female Figurines From The Zhob Valley, Kulli And Harappa Sites. Double-Headed Animal Protomes From Harappa, Hissar And Luristan

TERRACOTTA FEMALE FIGURINES

Zhob

1.	Stein. Baluchistan (M.A.S.I. No.37).	Pl. IX.P.W.9.
2.	ibid.	Pl. IX.p.262.
3.	ibid.	Pl. IX.P.W.5.
4.	ibid.	Pl. XII.K.14.
5.	ibid.	Pl. XVI.D.N.d.9.

Kulli

6.	Stein. Gedrosia (M.A.S.I.No.43).	Pl. XXII. Kul. V.VII.3.
7.	ibid.	Pl. XXXI. Mehi. III.2.2.
8.	ibid.	Pl. XXXI. Mehi. III.8.3.
9.	ibid.	Pl. XXXI. Mehi. II. 10.2.a.
10.	ibid.	Pl. XXXI. Mehi. III. 4.10.

Harappa

11.	Mackay. F.M.D.	Pl. LXXV.3.
12.	ibid.	Pl. LXXV.21.
13.	ibid.	Pl. LXXV.17.
14.	ibid.	Pl. LXXV.5.
15.	ibid.	Pl. LXXV.7.

DOUBLE-HEADED ANIMAL PROTOMES

16. Gordon Collection. Harappa 51/1929.
17. Schmidt. Hissar.
18. Heine-Geldern. Arch. Traces of the Vedic Aryans. J.I.S.O.A. Vol. IV. Pl. XVII.6.

PLATE XLVI

Bronze Coiled Bracelets And Finger Rings, Etched Carnelian Beads, Segmented And Notched Beads And Carved Steatite Vases

BRONZE COILED BRACELETS AND FINGER RINGS

1.	Mackay. Ch.D.	Pl. XC.34.
2.	Schmidt. Hissar.	Pl. LIII.
3.	ibid.	Pl. LIII.
4.	ibid.	Pl. LIV.
5.	Arne. Shah Tepe.	p. 298.
12.	Mackay. Ch.D.	Pl. LXXIII.11.
13.	ibid.	Pl. LXXIII.12.
26.	Arne. Shah Tepe.	p. 298.

ETCHED CARNELIAN BEADS

6.	Mackay. Ch.D.	Pl. LXXIX.13.
7.	Mackay. F.M.D.	Pl. CXXXV.3.
8.	Beck. Etched Carnelian Beads, Anti.J.	
9.	Arne. Shah Tepe.	Pl. XCII.
10.	Mackay. Ch.D.	Pl. LXXIX.1.
11.	Schmidt. Hissar.	Pl. XXXV.

SEGMENTED BEADS

14.	Schmidt. Hissar.	Pl. XXXII.
15.	ibid.	Fig. 133.
16.	ibid.	Pl. LXVI.
17.	Arne. Shah Tepe.	Pl. LXXV.
18.	Bruton. Badarian.	Pl. XLIX.
19.	Mackay. F.M.D.	Pl. CXXXIV.11.
20.	Marshall. M.D.	Pl. CXLVI.30.

NOTCHED BEADS

21.	Mackay. F.M.D.	Pl. CXXXVI.25.

22. Mackay. F.M.D. Pl. CXXXV.3.
23. Schmidt. Hissar. Pl. LXIX.
24. Arne. Shah Tepe. Pl. XCII.
25. ibid. Pl. XCII.

CARVED STEATITE VASES WITH MAT PATTERN

27. Mackay. F.M.D. Pl. CXLII.45.
28. M.D.P.Vol.XII. 69. Eliot. Excavts. Mes. and W. Iran, Susa. Exhibit III.
29. Eliot. Excavts. Mes. and W.Iran. Kish. Exhibit III.

PLATE XLVII

Bronze Antimony Pots And Rods

1. Mackay. Ch.D. Pl. LXXIII.39.
2. Marshall. M.D. Pl. CXL.16.
3. Mackay. F.M.D. Pl. CXXVIII.18.
4. ibid. Pl. LIV.1.
5. Pope. New Light on the Art of Prehistoric Persia. I. L. News, January 28, 1933.
6. Godard. Bronzes du Luristan.
7. ibid.
8. Schmidt. Hissar. 1931. Museum Journal. Pl. CLII.
9. ibid. Pl. CXXXI.
10. Mackay. F.M.D. Pl. C.2.
11. ibid. Pl. C.1.
12. ibid. Pl. C.4.
13. Mackay. Ch.D. Pl. LXIX.7.
14. ibid. Pl. LXVIII.9.
15. ibid. Pl. LXXII.19.
16. ibid. Pl. LXXII.18.
17. ibid. Pl. LXXII.22.
18. Mackay. F.M.D. Pl. C.3.
19. Marshall. M.D. Pl. CLVII.
20. Vats. Harappa. Pl. CXXV.

21.	Stein. Arch. Reconn.	Pl. XVIII.
22.	Schmidt. Hissar.	Pl. LIII.
23.	ibid.	Pl. XLVIII.
24.	ibid.	Fig. 117.
25.	Schmidt. Hissar (1391). Museum Journal.	Pl. CIV. H. 1169.
26.	Arne. Shah Tepe.	p. 302,648 c.
27.	Wulsin. Tureng Tepe.	Pl. XIX.
28.	Ghirshman. Sialk I.	Pl. LXXXIV.S.1408.
29.	ibid.	Pl. XCV.d.
30.	ibid.	Pl. XCV.c.
31.	ibid.	Pl. XCV.e.
32.	Pumpelly. Turkestan.	F. 151.

PLATE XLVIII

Bronze Pins And Axe-Adzes

Pins

1.	Hancar. Die Nadel Formen des etc., Eur. Sept. Antiqua VII.	pp. 113-183.
2.	ibid.	
3.	ibid.	
4.	ibid.	
5.	ibid.	
6.	ibid.	
7.	ibid.	
8.	ibid	
9.	M.D.P.Vol.XXV.	Fig. 34.8.
10.	Mallowan. Iraq. Vol. III.	Fig. 8.1.
11.	ibid. Vol.IX.	Pl. XLII.18.
12.	Evans. The Shaft Graves, etc.	Fig. 34.b.
13.	Mackay. Kish.	Pl. 11.13.
14.	Hancar. Luristan.	Fig. 42.
15.	Osten. Alishar Huyuk. II.	Fig. 283.e 945.

Axe-Adzes

16.	Mackay. F.M.D.	Pl. CXX.27.
17.	Schmidt. Hissar.	Pl. LII.
18.	ibid.	Pl. LII.
19.	ibid.	Pl. LII.
20.	ibid.	Pl. LII.
21.	Childe. The Axes from Maikop, etc. Annals of Arch. Vol. XXIII.	

PLATE XLIX

Bronze Axes From Shahi Tump, Chanhudaro, Maikop, Caucasus And Ur. Stamp Seals From Shahi Tump, Chanhudaro, Hissar And Anau

Bronze Axes

1.	Stein. Gedrosia (M.A.S.I.No.49).	Pl. XIII.
2.	Mackay. Ch.D.	Pl. LXXII.25.
3.	Childe. Maikop Axes. Annals of Arch. (Liverpool). Vol.XXIII.	Pl. LI.a.
4-9.	Eurasia. Sept. Antiqua. Vol.IX.	Fig.21.
10.	Woolley. Ur. Vol.11.	Pl. 223. U.15314.

Stamp Seals

11-15.	Stein. Gedrosia (M.A.S.I. No.43).	Pl. XIV.
16.	Mackay. Ch.D.	Pl. XLIV.2.
17.	Schmidt. Hissar (1931). Museum Journal.	Pl. XCI. H1087.
18.	ibid.	Pl. XCI. H959.
19.	ibid.	Pl. XCI. H333.
20.	Schmidt. Hissar.	Pl. XXVIII. H3712.
21.	ibid.	Pl. XLIX. H.2682.
22.	Pumpelly. Turkestan.	Fig. 257.
23.	Ghirshman. Sialk.	Pl. LXXXVI.5417.
24.	M.D.P. Vol.XXV. p.187 (Stone).	
25.	M.D.P. Vol.XXX.	Fig. 44.10.

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ILLUSTRATIONS



Mohenjodaro, the more famous southern metropolis of the Indus Valley. General view of the citadel with the Kushana period stupa in the background





a. Mohenjodaro. Covered drains in the street

b. Mohenjodaro. A well inside a house

c. Mohenjodaro. The 'Great Bath' in the citadel



Mohenjodaro. Deep diggings in the excavations of 1950 on the Citadel showing the Great Granary in the background, gradually engulfed by a clutter of later Indus Valley buildings





a. Amri. Excavations in Mound B (1960-62)



b. Mohenjodaro. The loading-bay and platform of the Great Granary



a. Amri. Excavations in Mound A



b. Amri. A deep trench in Mound A

PLATE VI



a. Kot Diji. Pottery 'in Situ' in Harappa level

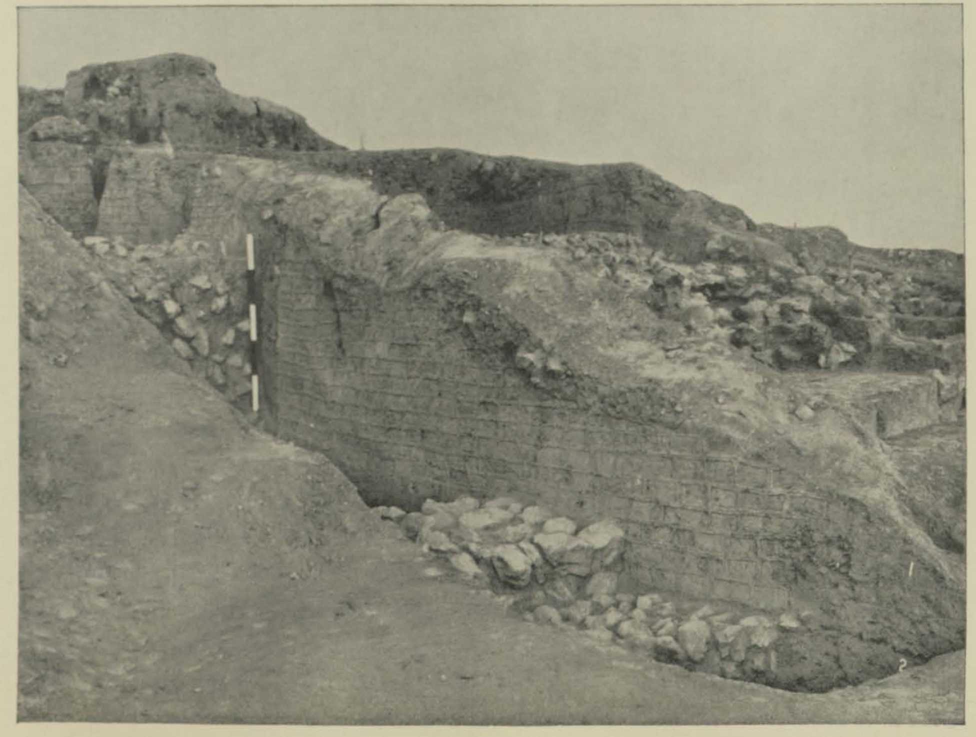


b. Kot Diji. A panoramic view of the prehistoric mound and its environs



a. Kot Diji. Excavations on the fortified citadel in the background and the lower city in the foreground

b. Kot Diji. A section through the citadel fortifications showing stone foundations and mud-brick superstructures





a. Kot Diji. General view of the excavated building remains of Harappa settlement covering the upper half of the citadel mound





b. Harappa. Panoramic view of the 'Great Granary'



PLATE IX



Mohenjodaro. Steatite seals and their impressions with Harappa Script and Indus Valley animal designs



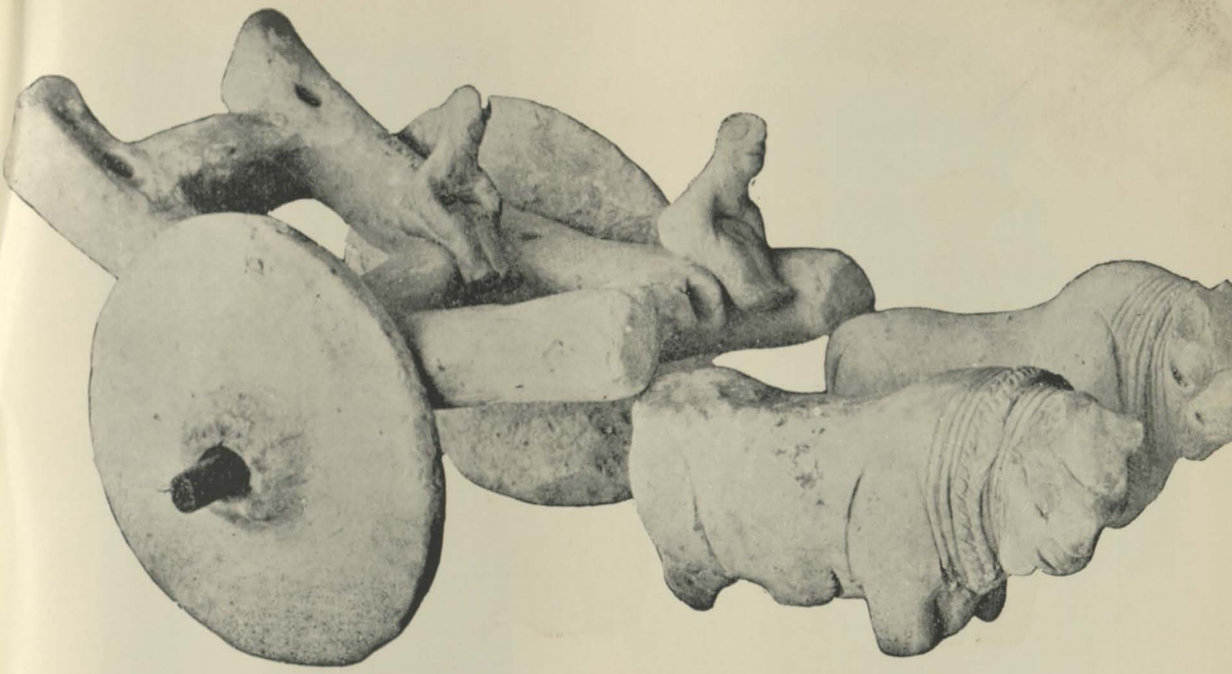
Mohenjodaro Bust of the 'King-Priest' in steatite stone

PLATE XI



Mohenjodaro. Terracotta figurines of mother goddesses heavily adorned with Jewellery





a. Mohenjodaro. Terracotta toy-cart complete with a pair of bullocks and driver

b. Mohenjodaro. Bronze figurine of the dancing girl



c. Mohenjodaro. Ornaments in stone, shell and ivory

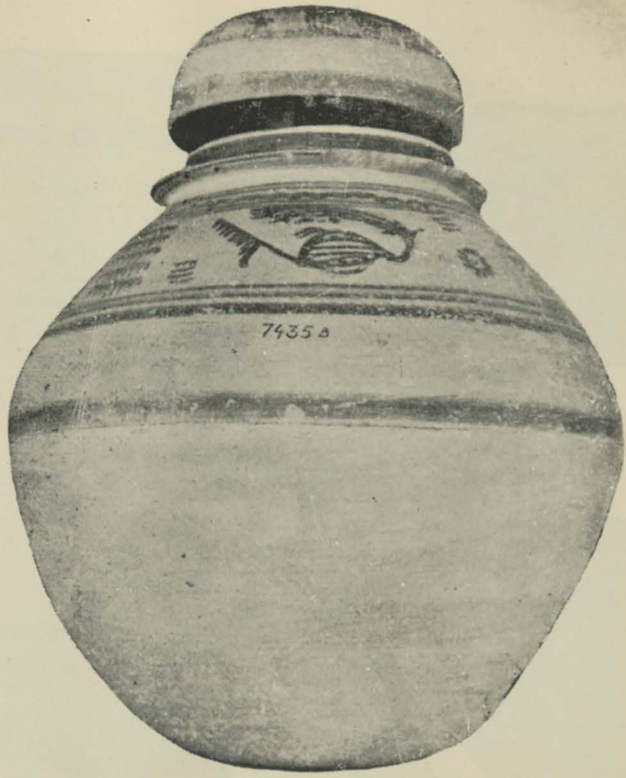


PLATE XIII

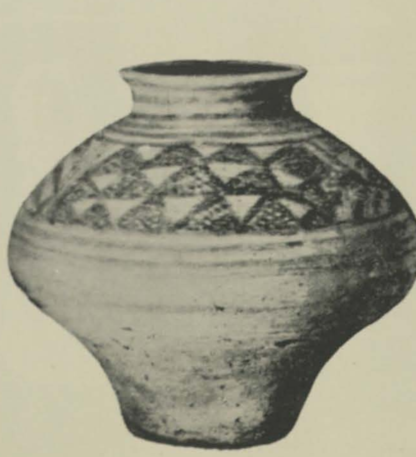


Mohenjodaro. Terracotta animal and human figurines : children's toys



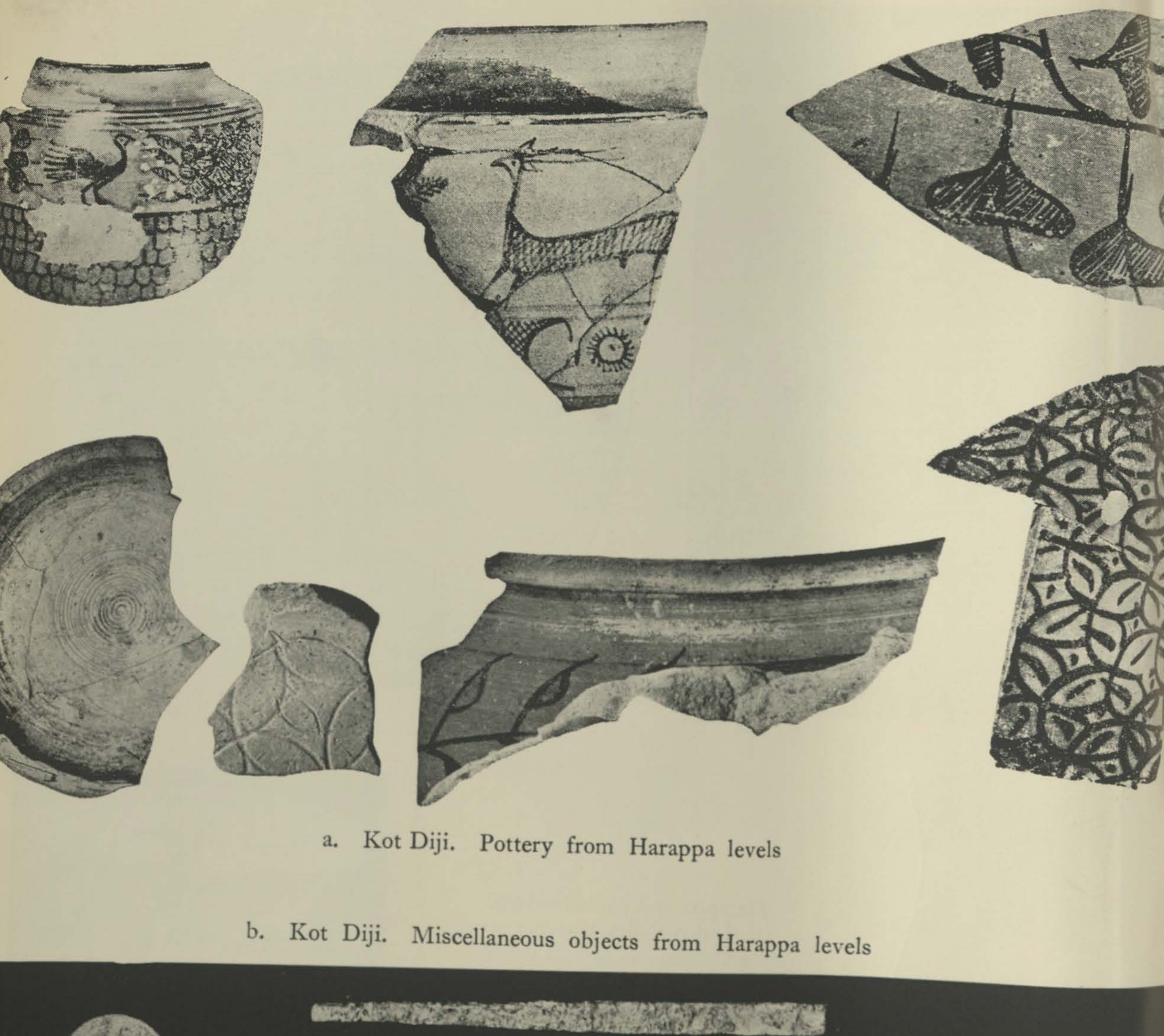








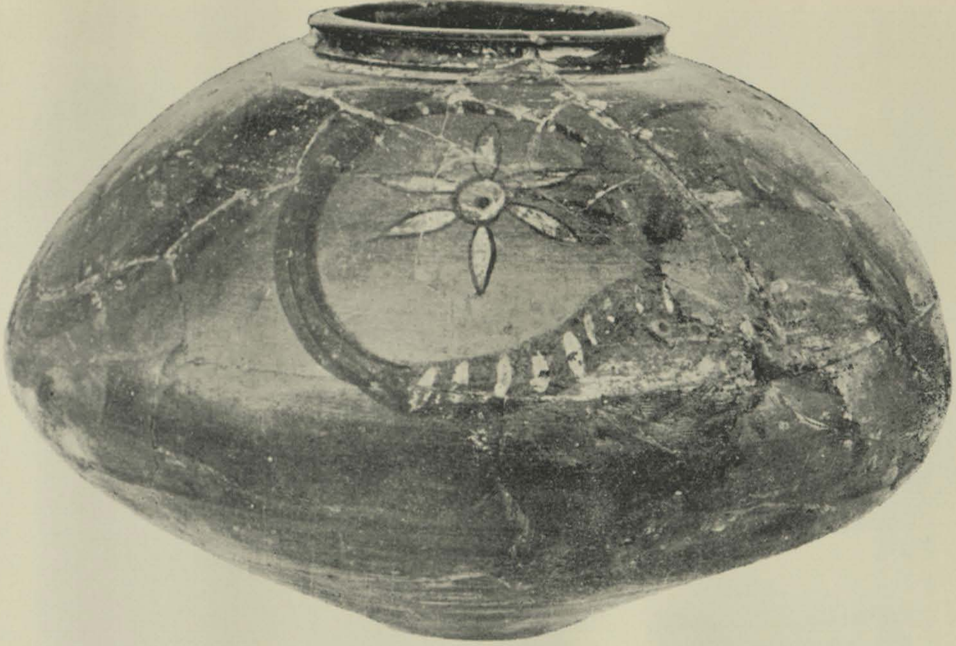
Harappa and Mohenjodaro.
Indus Valley pottery:
storage jars and jar cover



a. Kot Diji. Pottery from Harappa levels

b. Kot Diji. Miscellaneous objects from Harappa levels

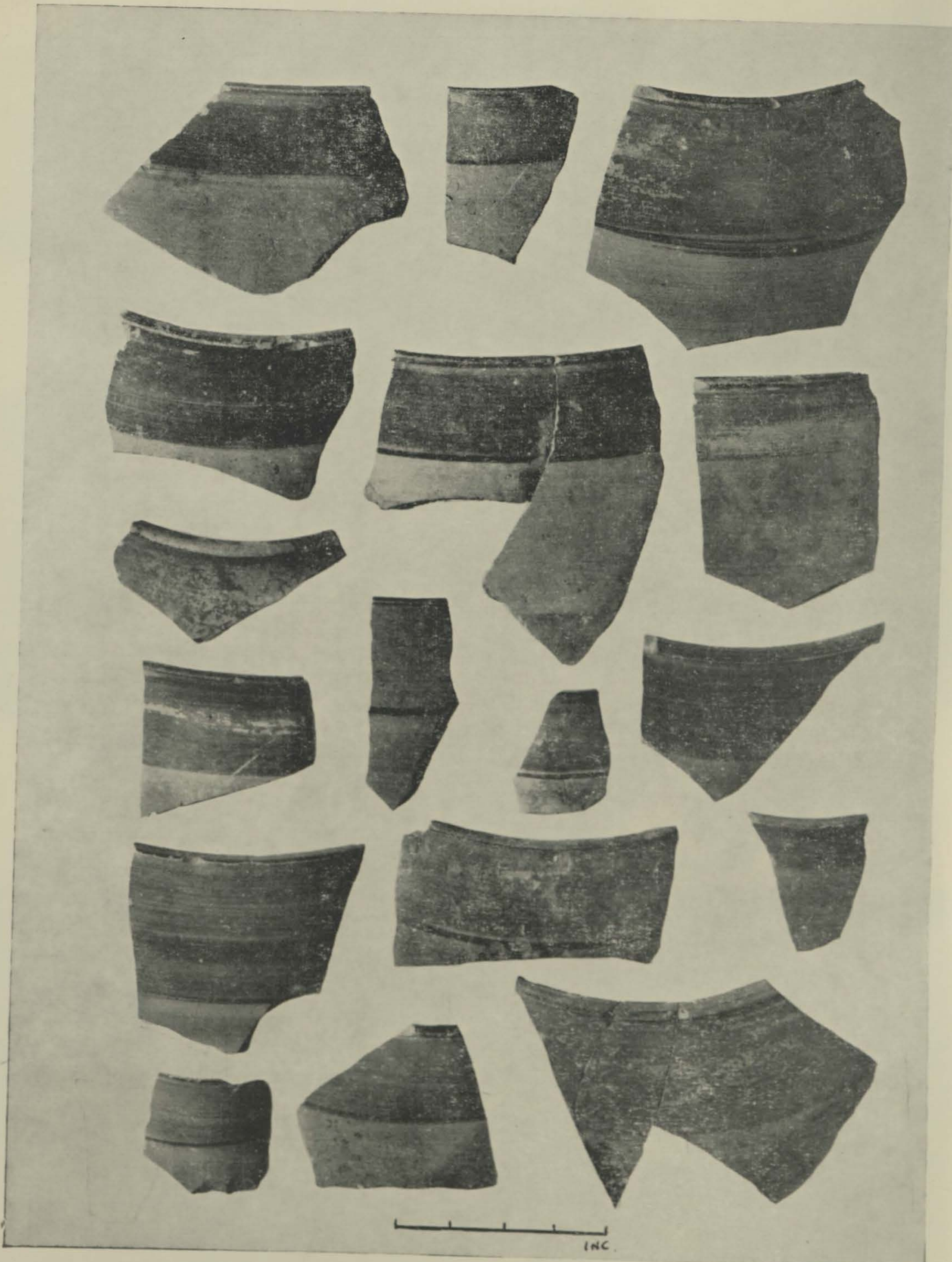




a. Kot Diji. Pre-Harappan 'Kot Diji' culture painted pot



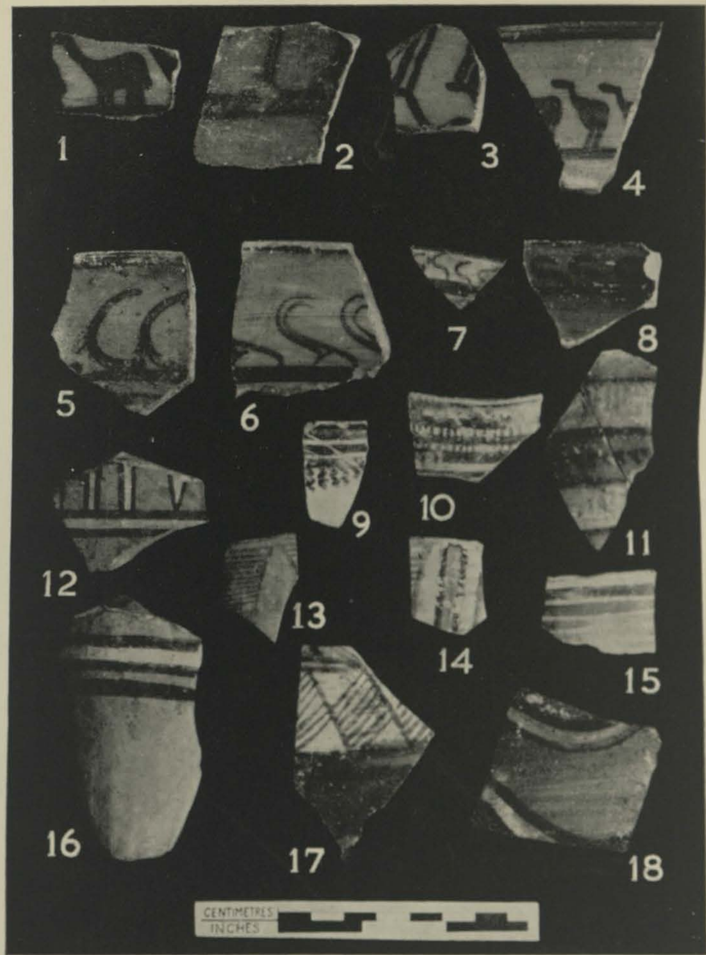
b. Kot Diji. 'Kot Diji' culture pottery from pre-Harappan levels



Kot Diji. 'Kot Diji' culture banded pottery



Kot Diji. 'Kot Diji' culture painted pottery



a. Baluchistan. Togau, Amri and other Baluchi wares

b. Amri. 'Jhukar' pottery

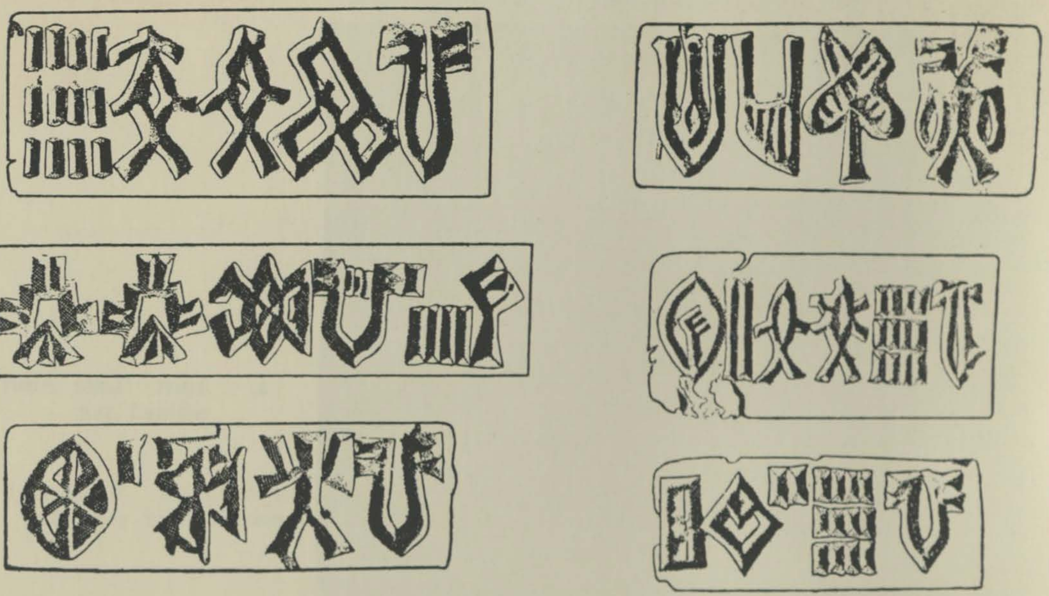




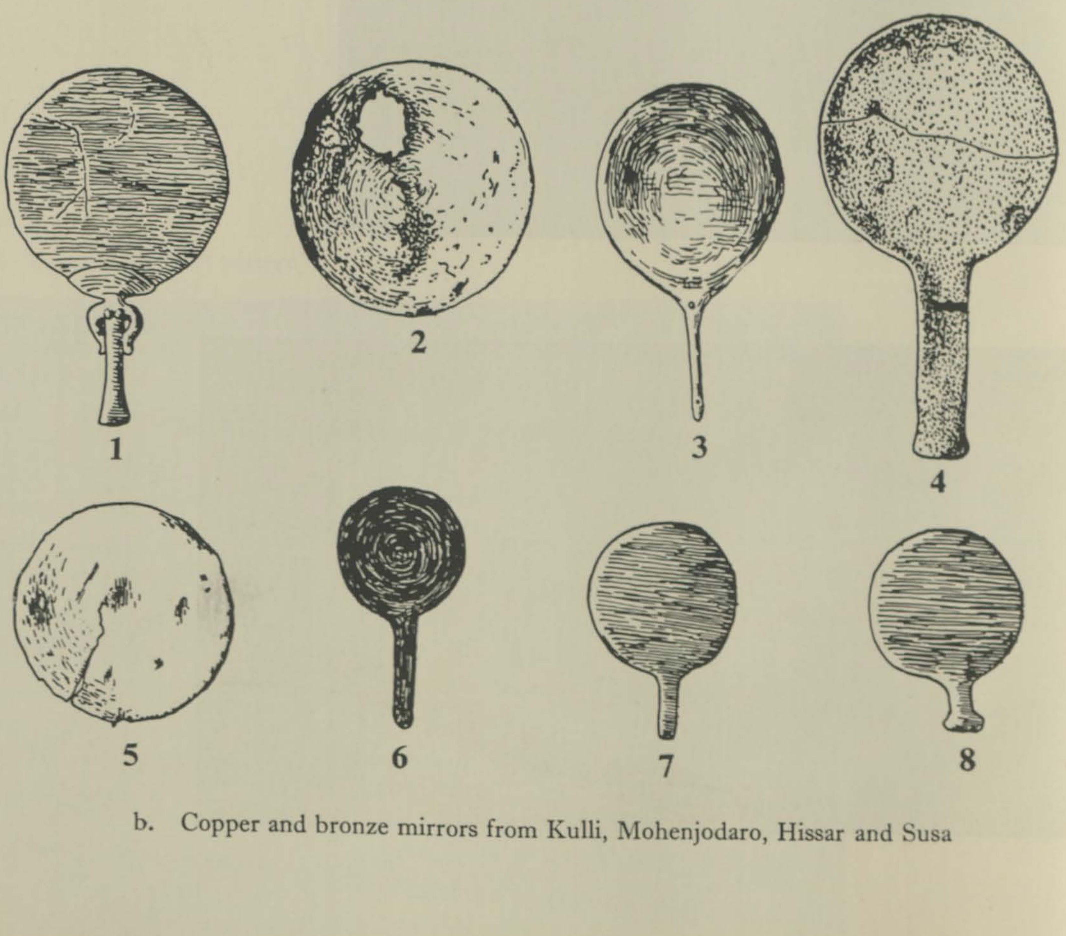
a. Amri. 'Late Amri' painted pot



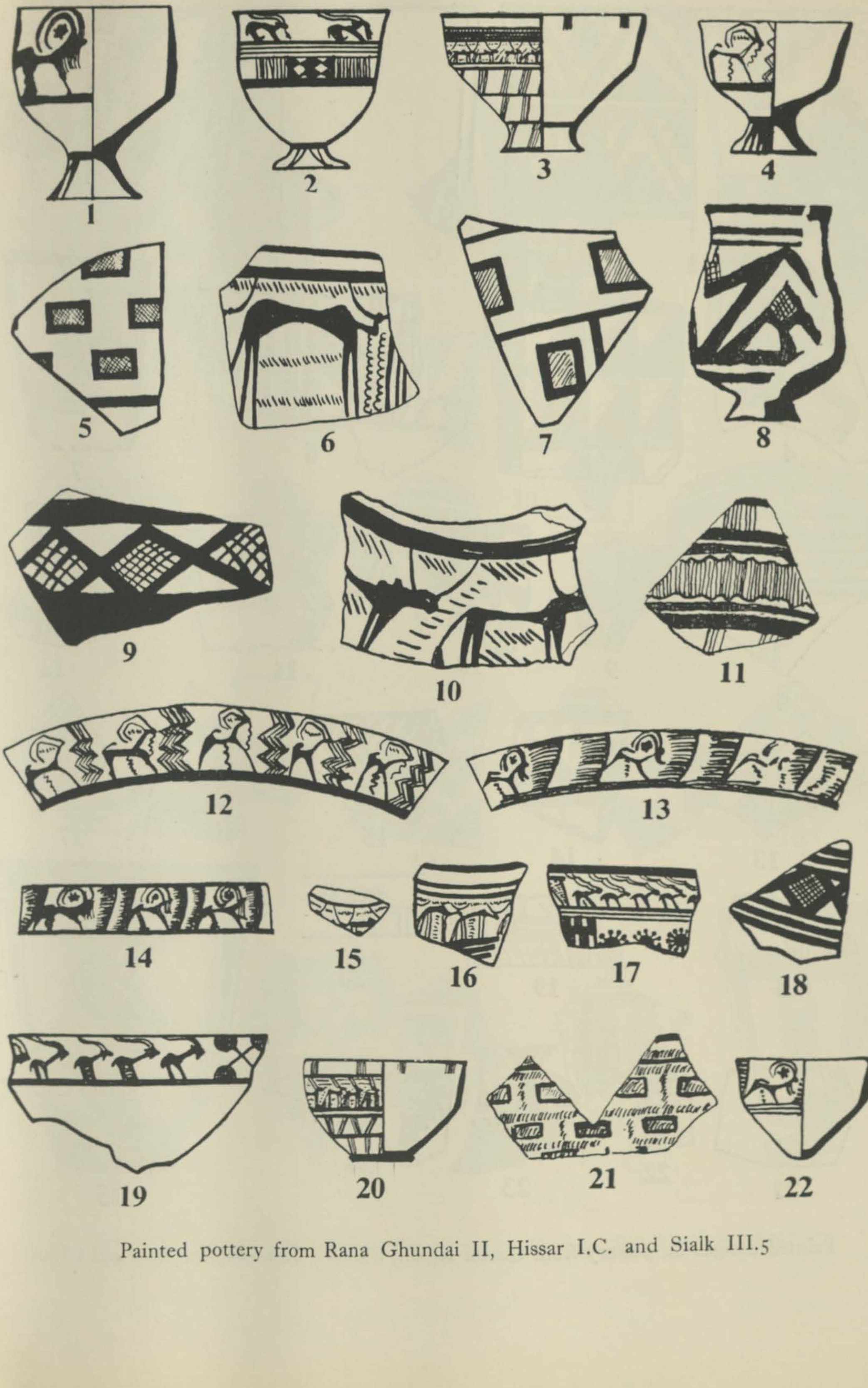
b. Amri. 'Amri' culture pottery



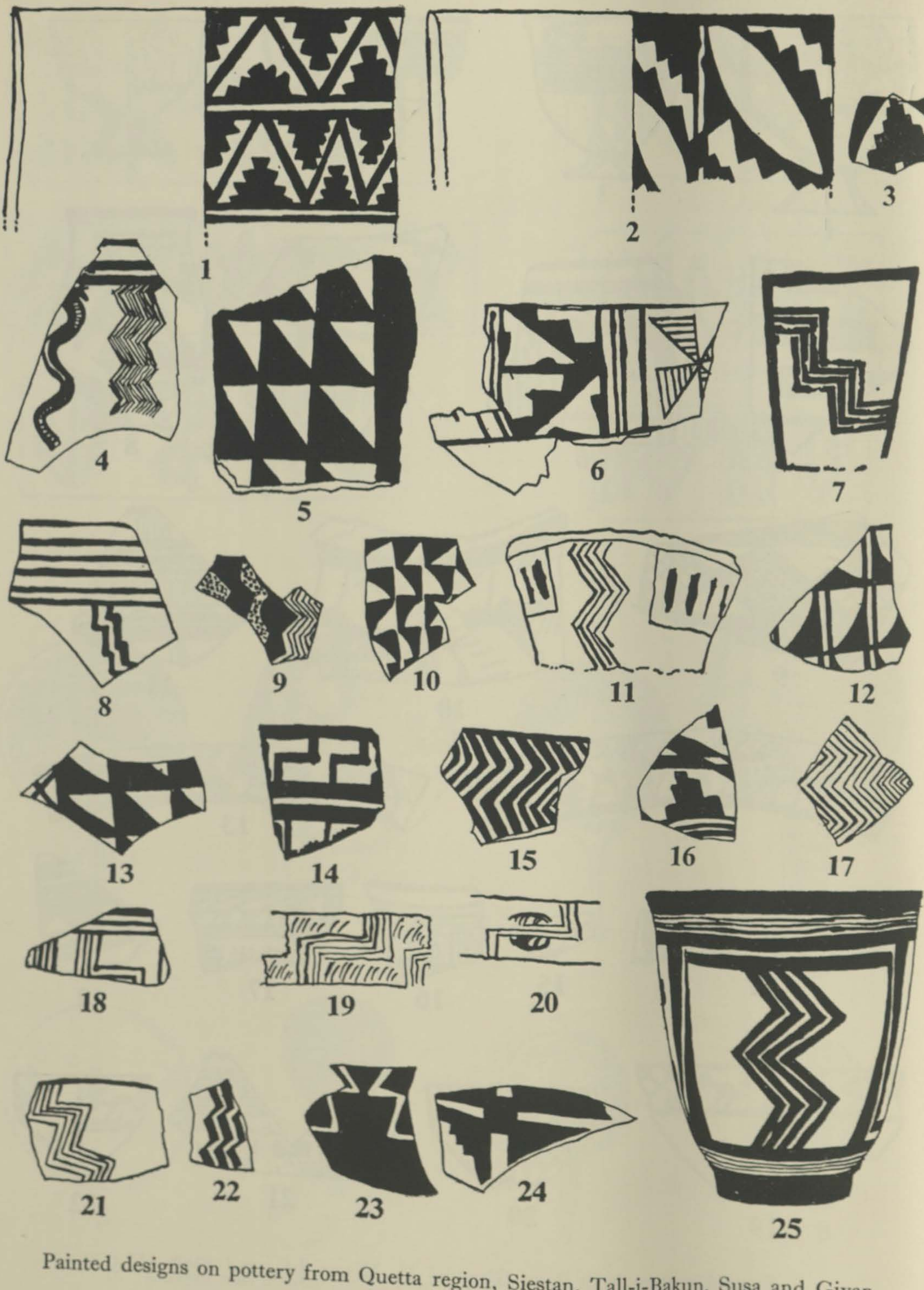
a. Indus Valley script



b. Copper and bronze mirrors from Kulli, Mohenjodaro, Hissar and Susa



Painted pottery from Rana Ghundai II, Hissar I.C. and Sialk III.5

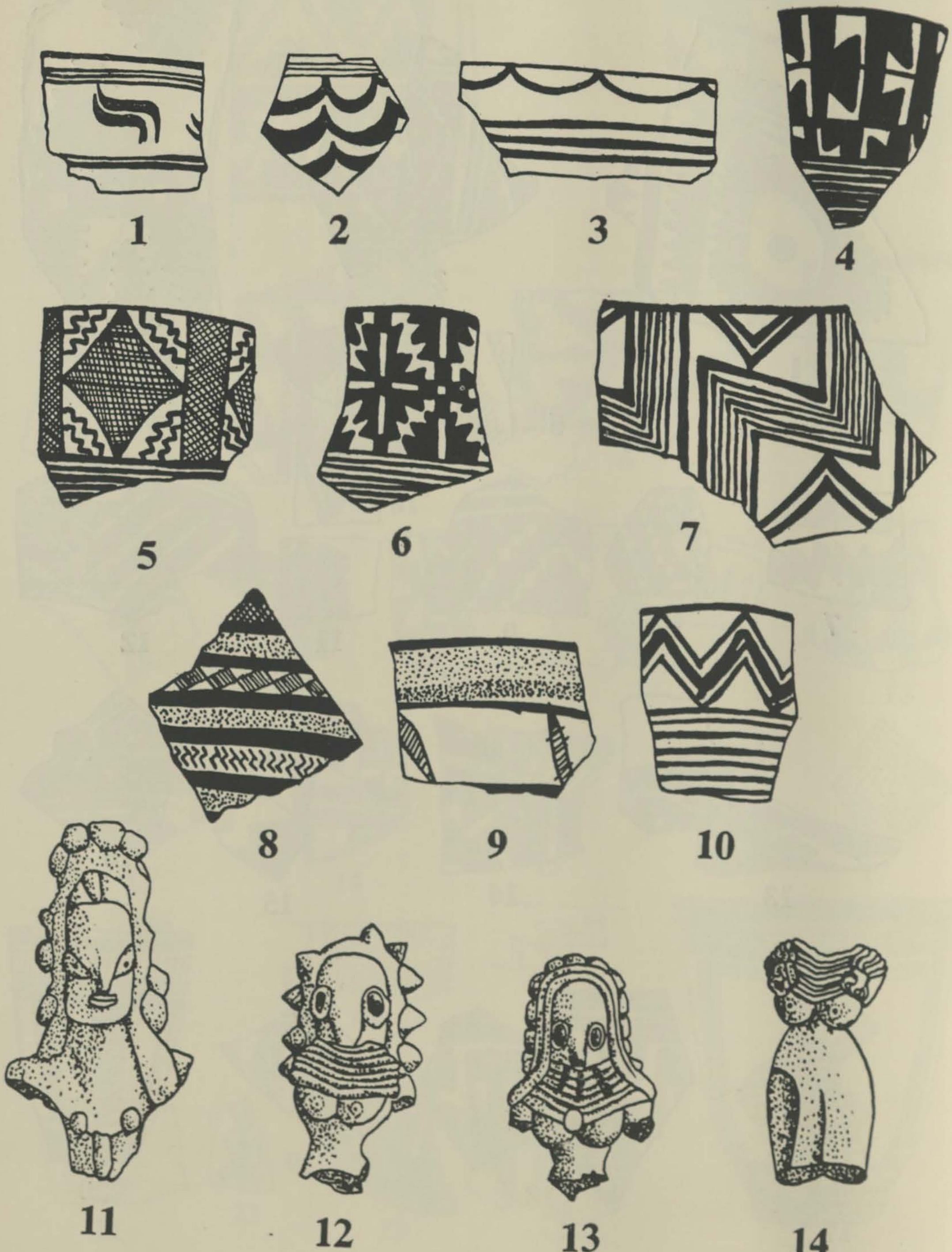


Painted designs on pottery from Quetta region, Siestan, Tall-i-Bakun, Susa and Giyan



Painted designs on pottery from Quetta region, Siestan, Tall-i-Bakun and Susa

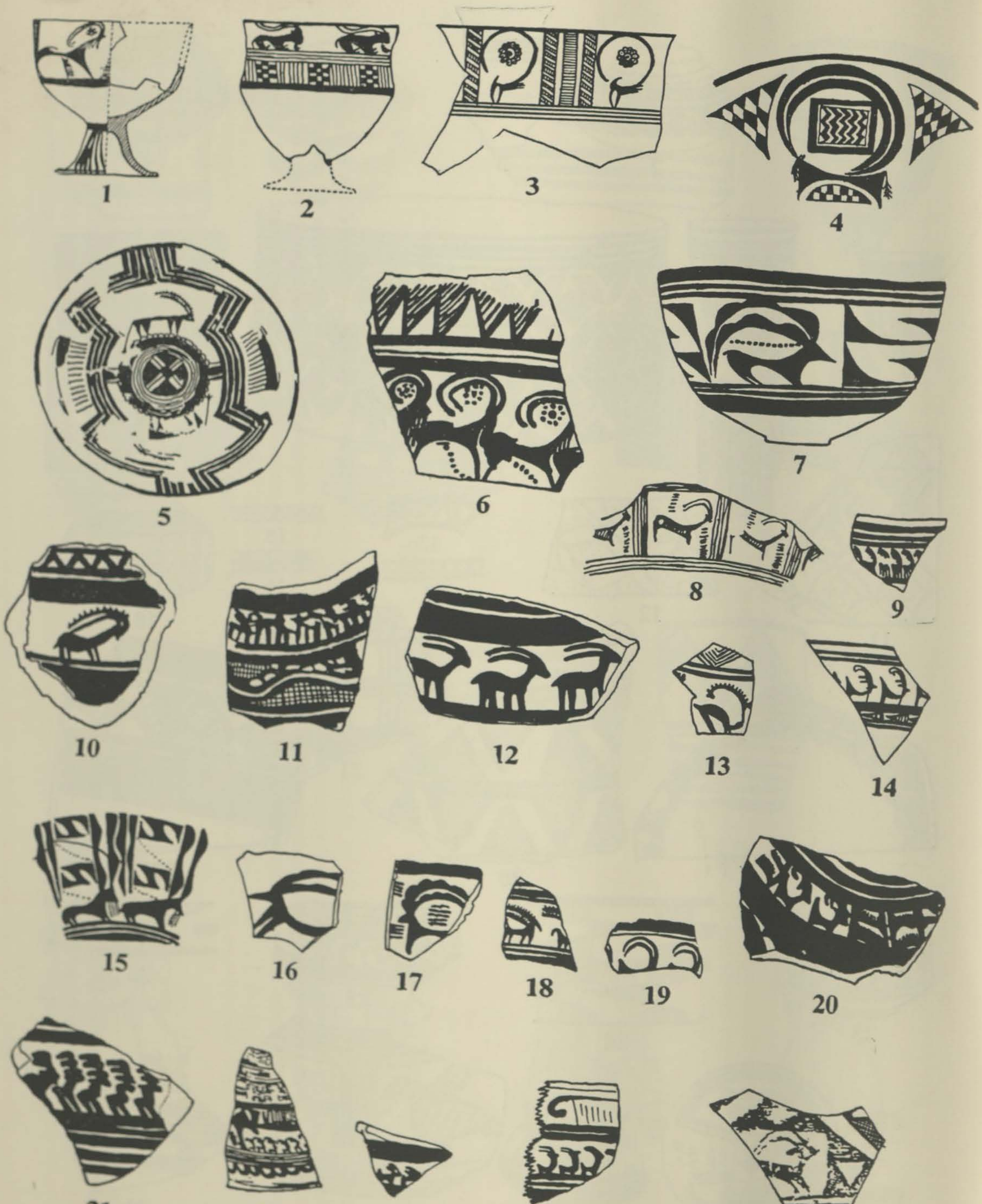
PLATE XXV



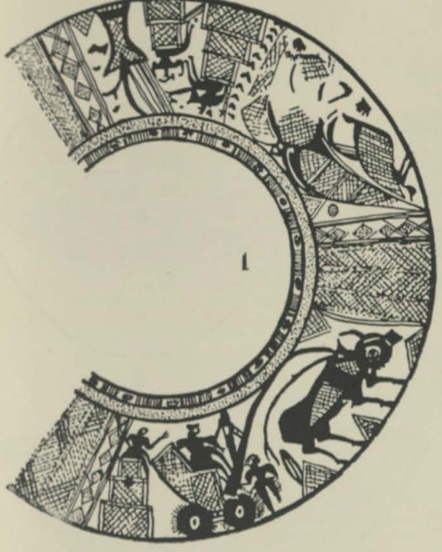
Painted pottery from Quetta valley; terracotta figurines from Zhob valley and Kandahar area



Painted pottery from Nal and Susa



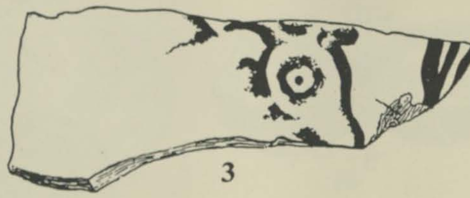
Painted pottery with ibex and goat motif from Iran, Baluchistan and the Indus valley



1



2



3



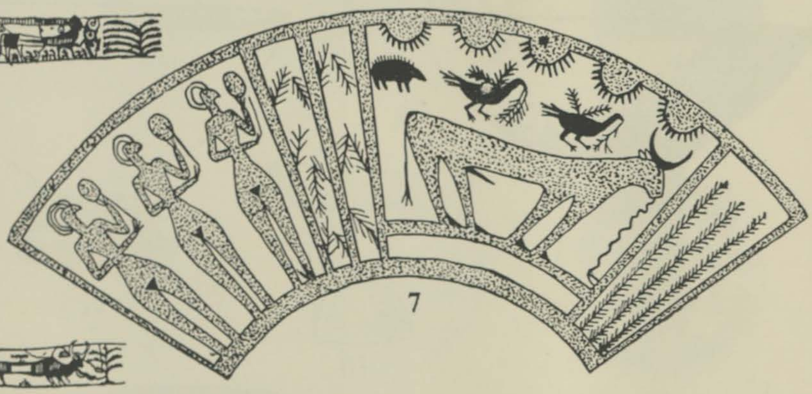
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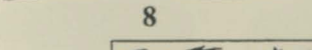
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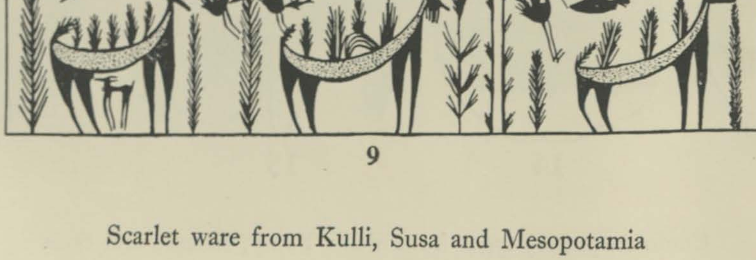
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Scarlet ware from Kulli, Susa and Mesopotamia

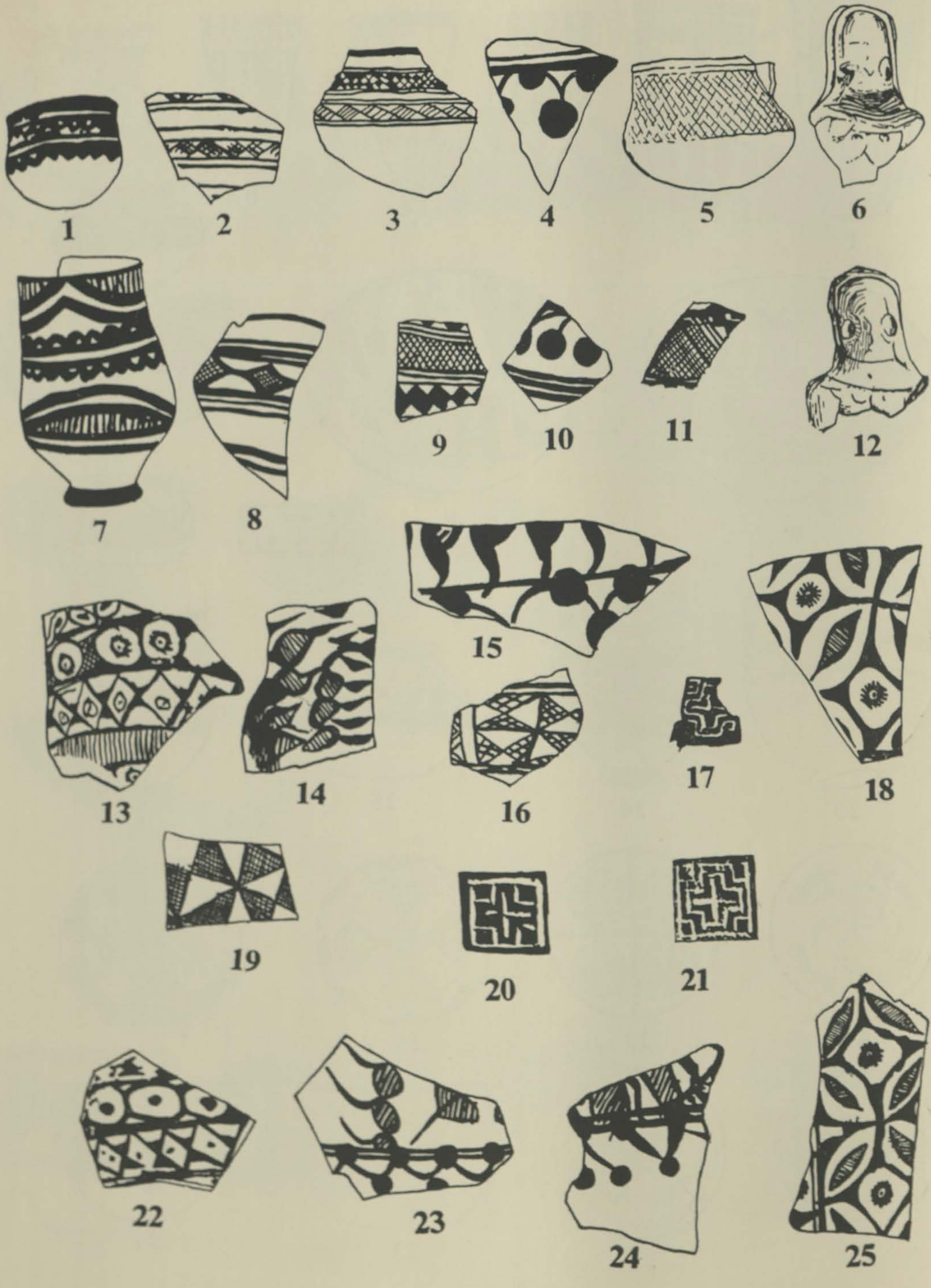
PLATE XXIX



Common pottery types from Shahi Tump, Khurab and Susa



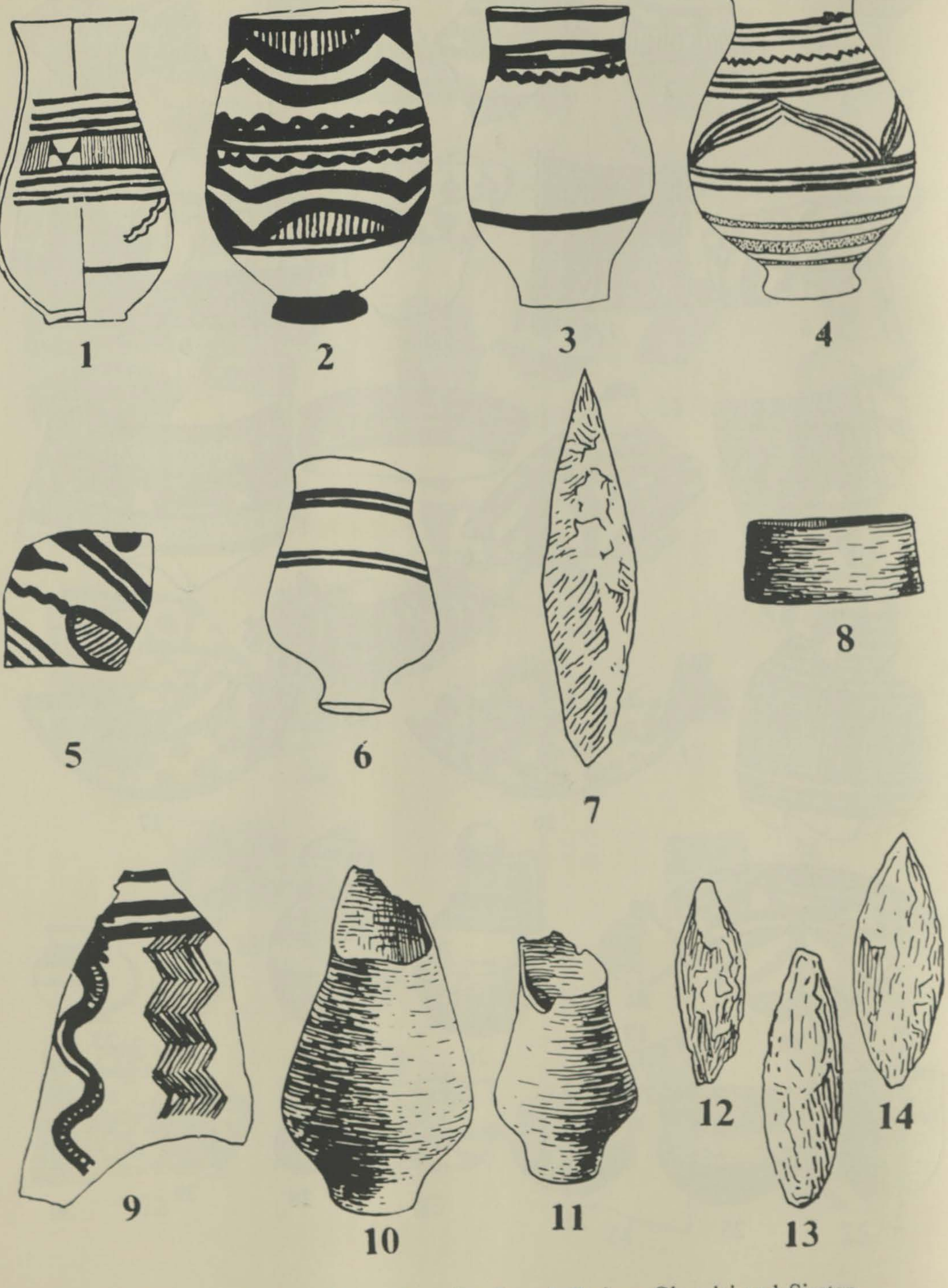
Common painted pottery types from Shahi Tump and Susa



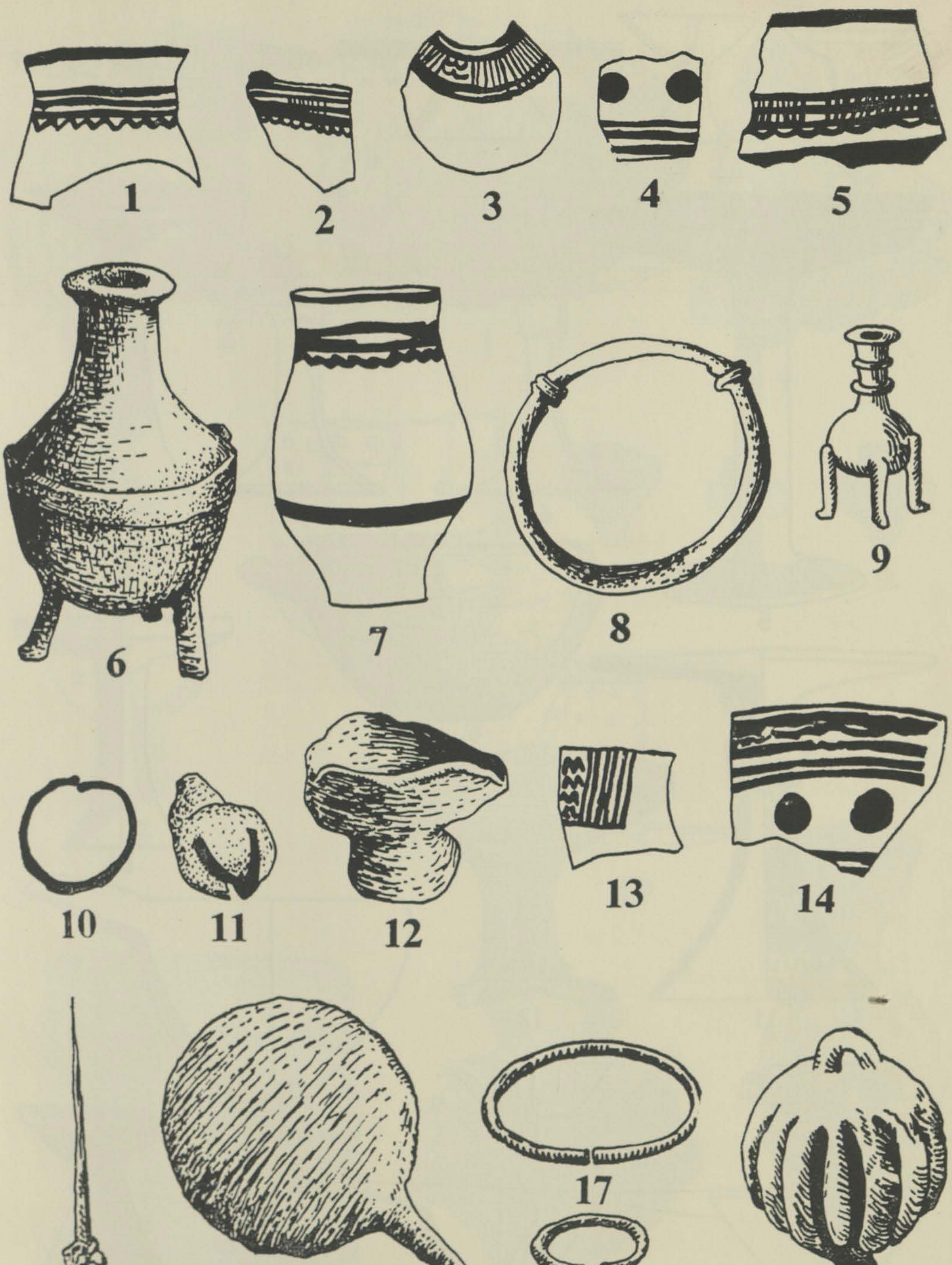
Painted pottery from Dabar Kot, Periano Ghundai and Harappa sites



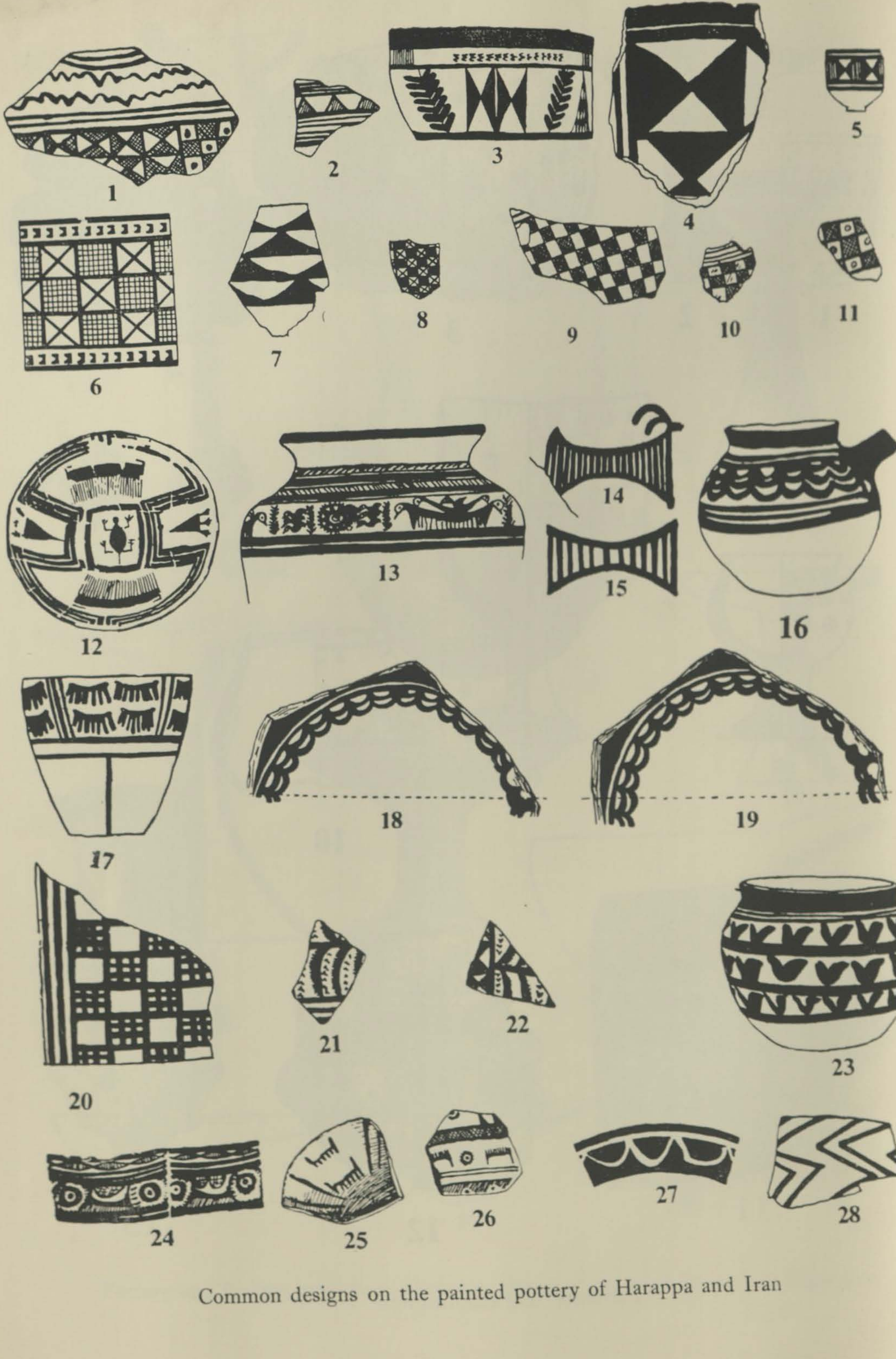
Painted pottery from Amri, Harappa, Jhukar, Jhangar and Cemetery-H



Pottery and other objects from Sur-Jangal, Periano Ghundai and Siestan



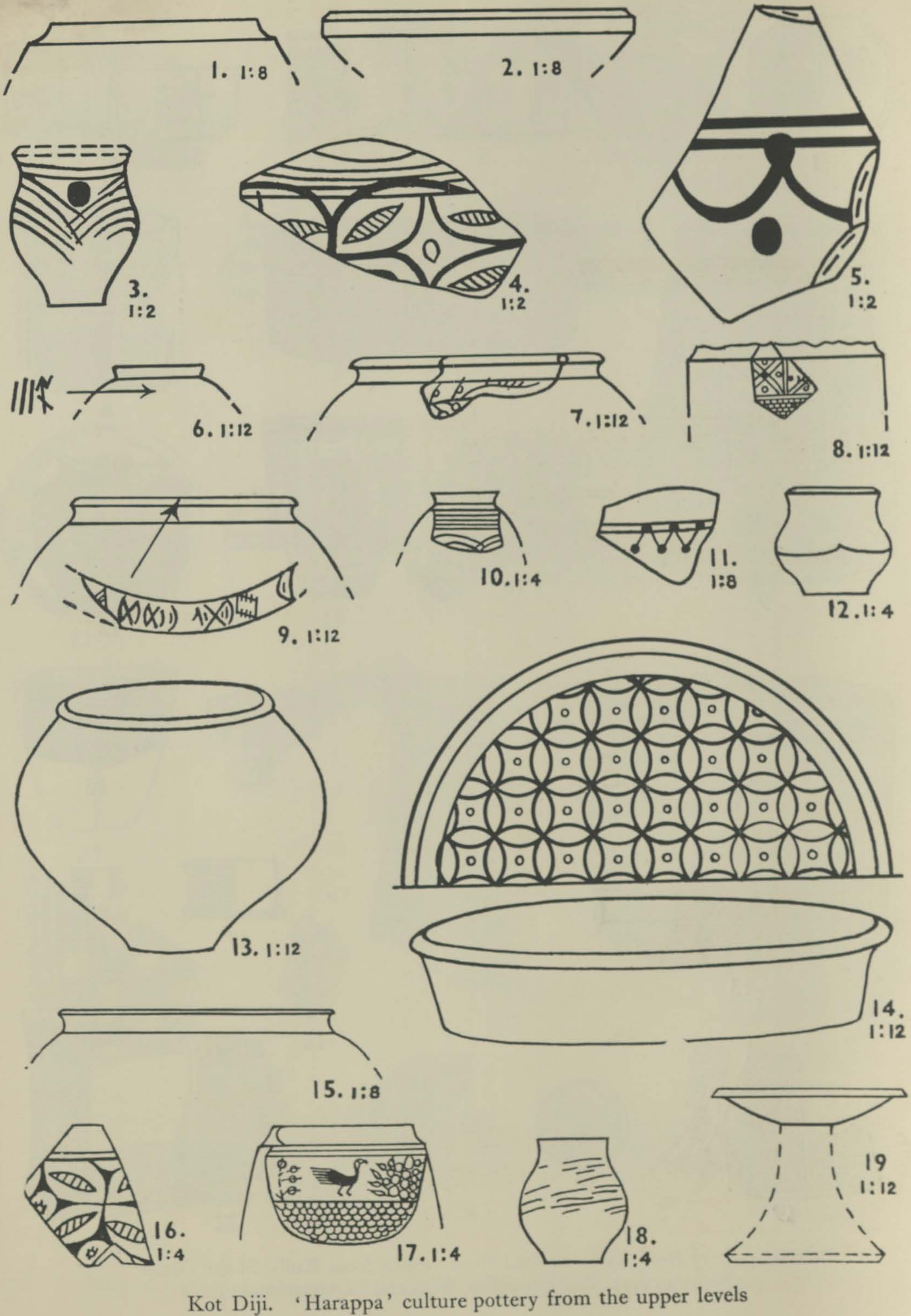
Pottery from Moghul Ghundai and Periano Ghundai; Toilet articles from Moghul Ghundai and Sialk Cemetery B



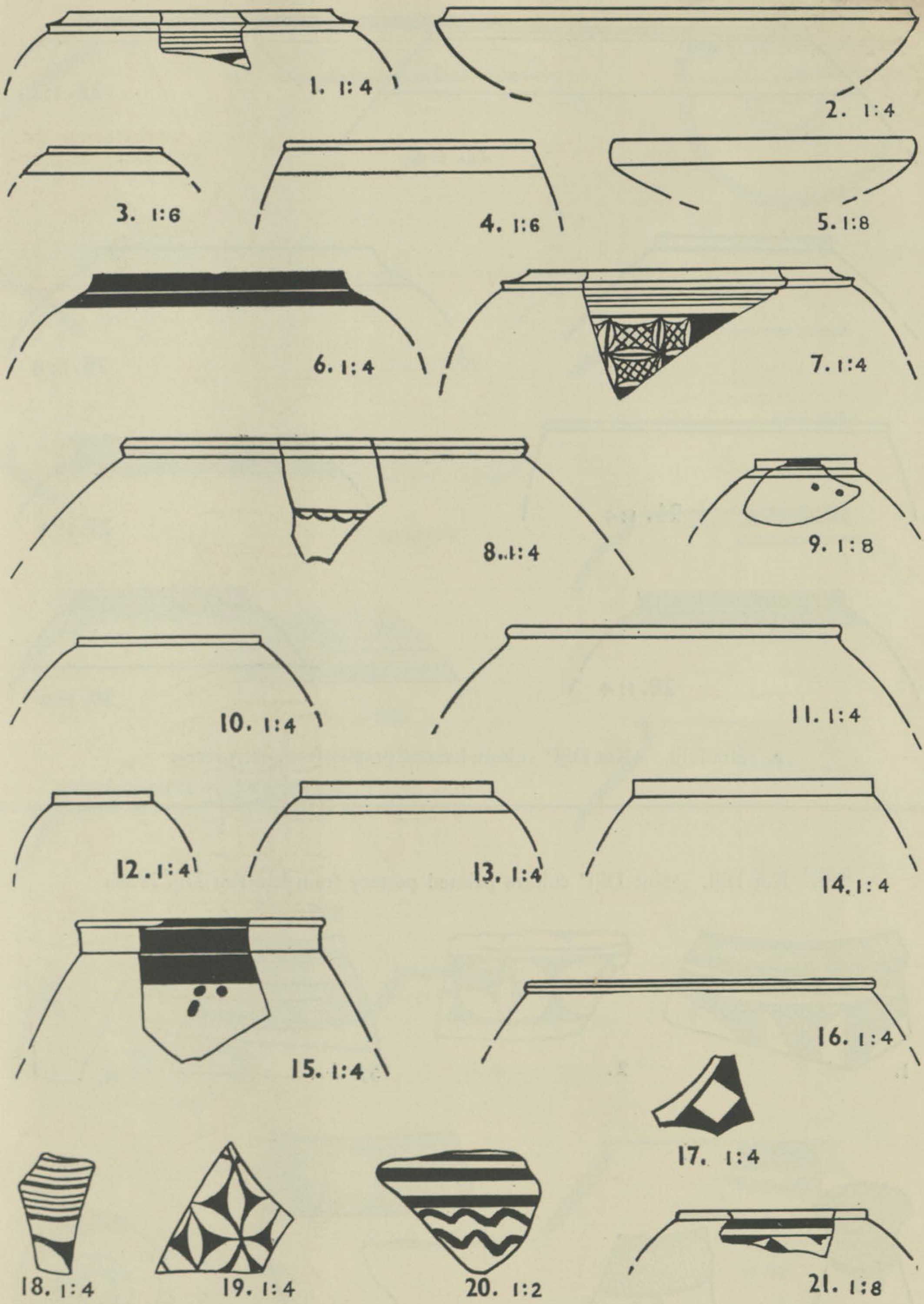
Common designs on the painted pottery of Harappa and Iran



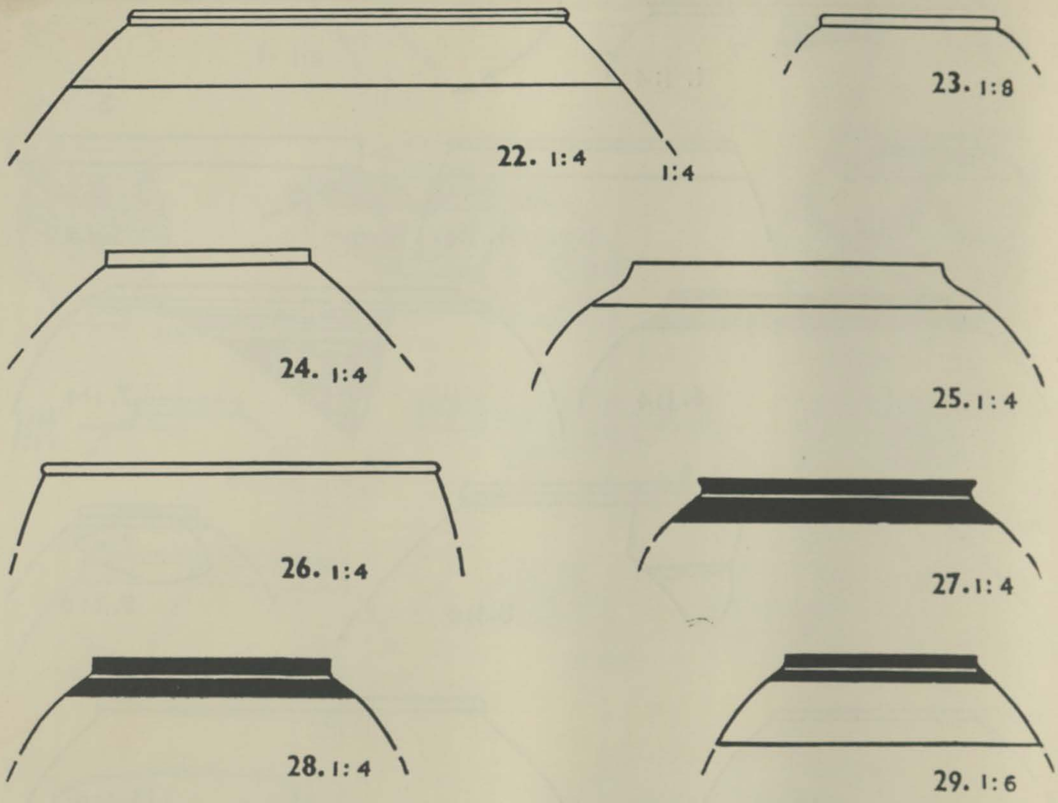
Painted pottery from Kulli. Incised stone vessels from Kulli, Shahi Tump
Mohenjodaro, Bampur valley, Susa and Mesopotamia



Kot Diji. 'Harappa' culture pottery from the upper levels

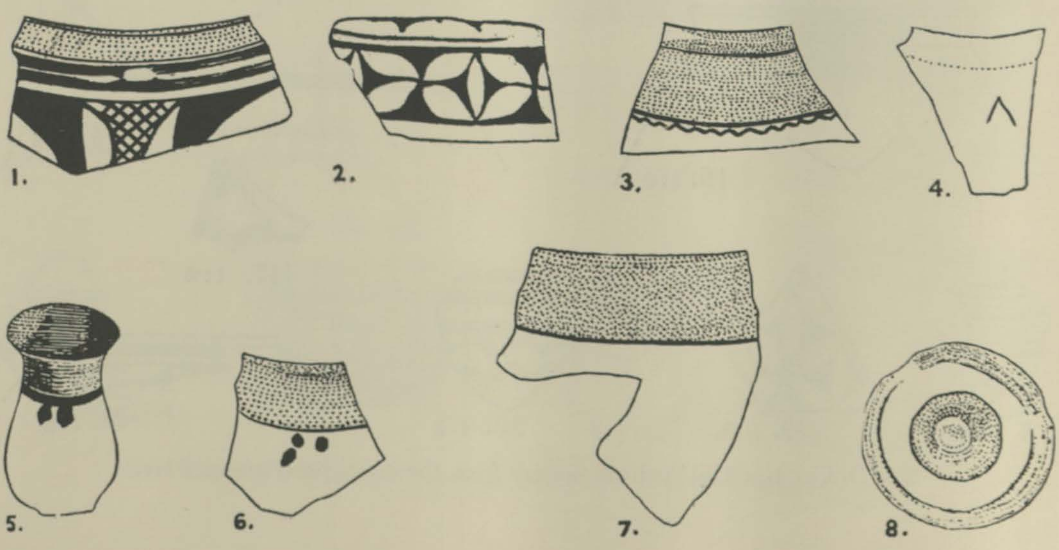


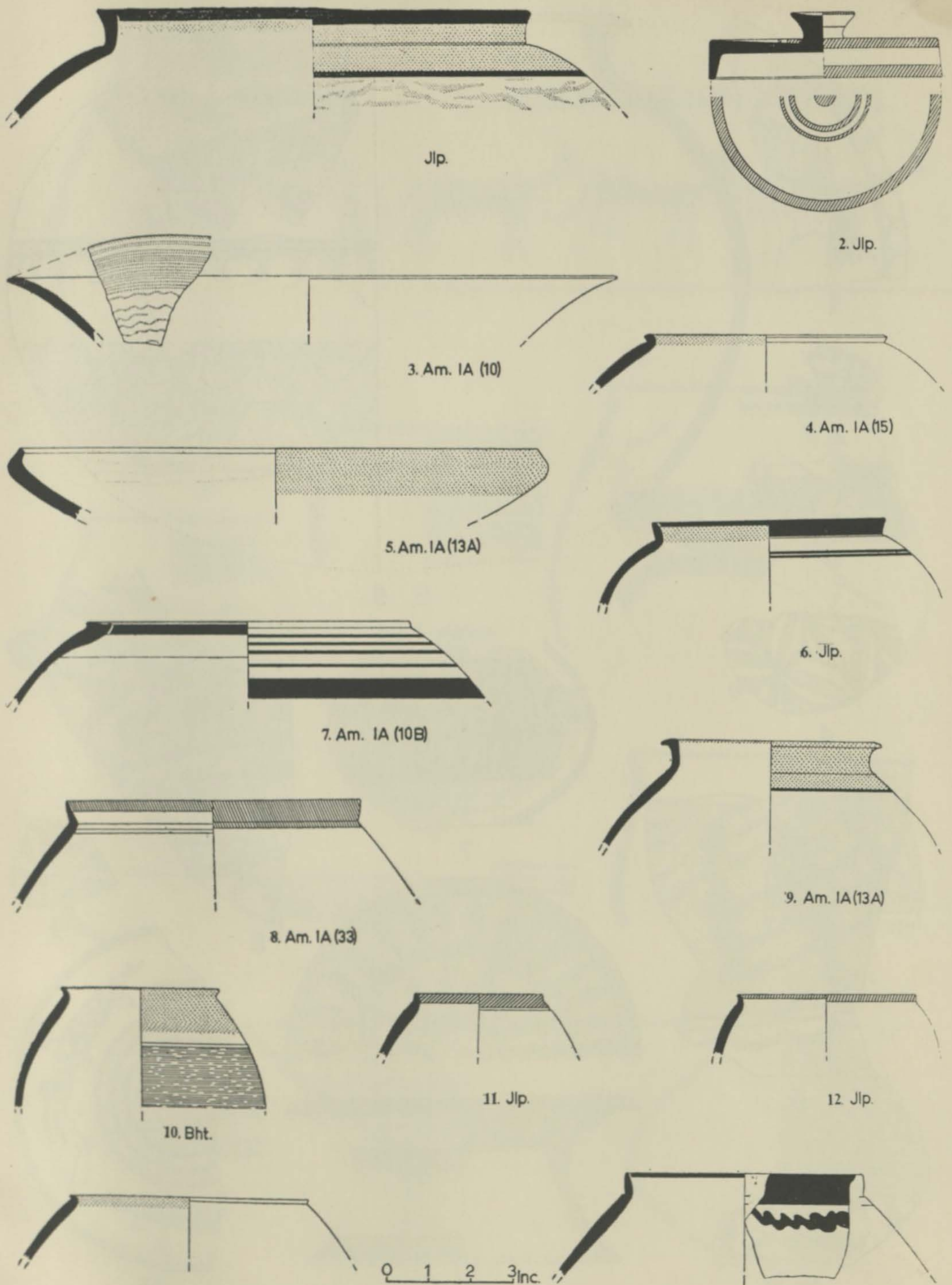
Kot Diji. 'Kot Diji' culture pottery from the lower pre-Harappan levels



a. Kot Diji. 'Kot Diji' culture banded pottery from early levels

b. Kot Diji. 'Kot Diji' culture painted pottery from late-Kot Diji levels



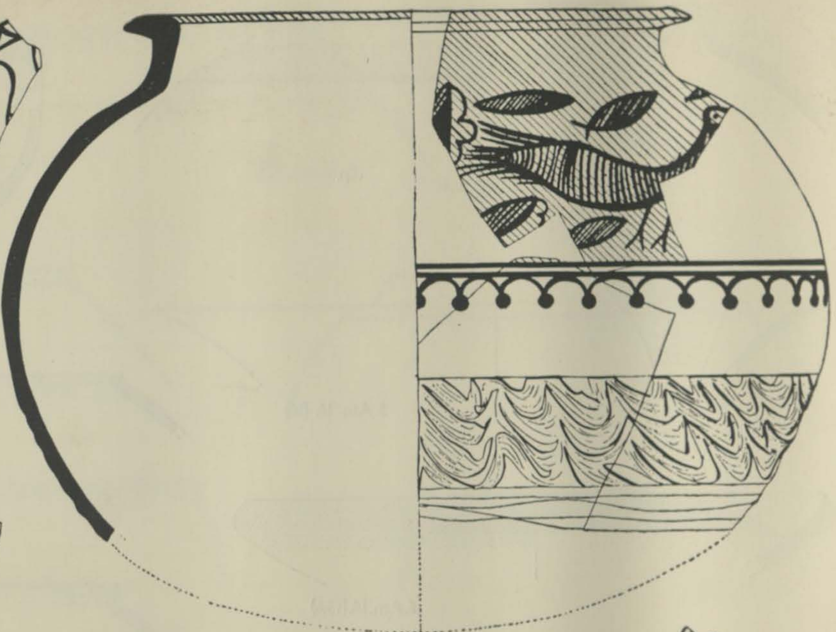


'Kot Diji' type pottery from other prehistoric sites of the Indus Valley and Baluchistan.
1-2, 6, 11-12 from Jalilpur; 3-5, 7-9, 13 from Amri; 10, 14 from Bhoot

PLATE XLIII



1



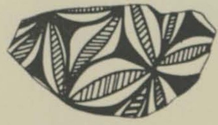
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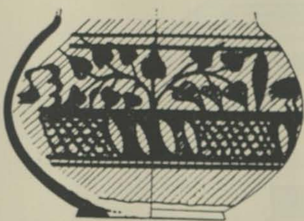
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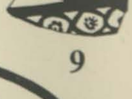
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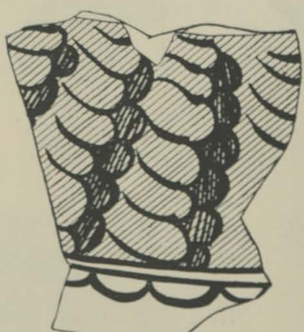
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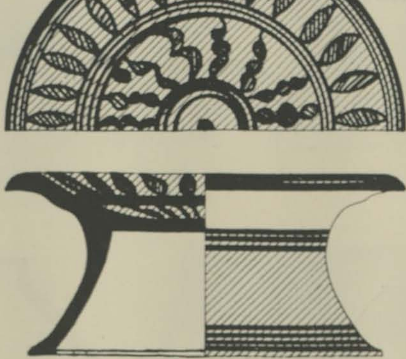
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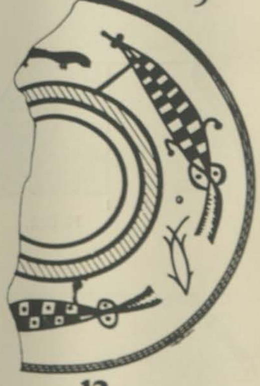
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6



11

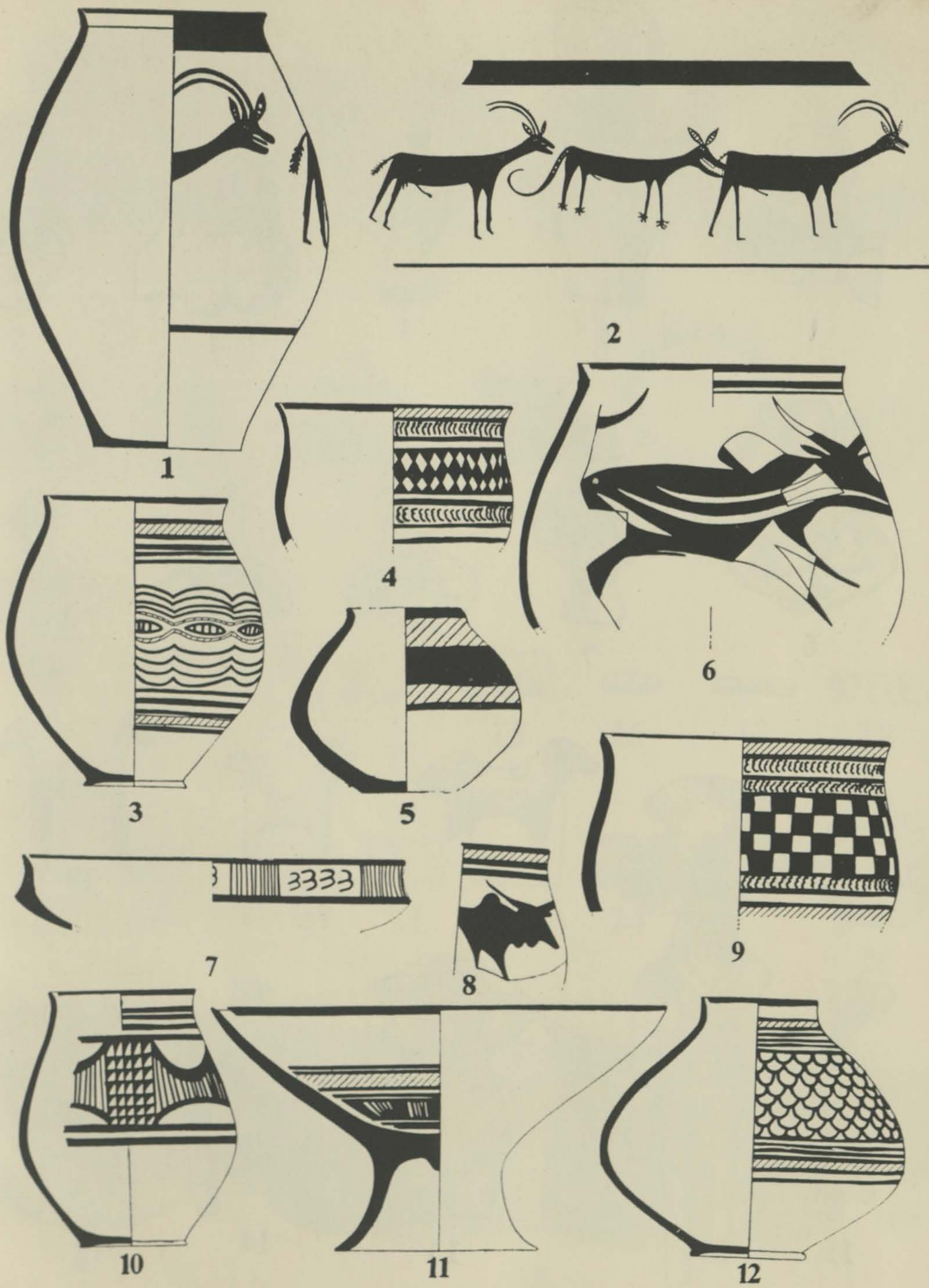


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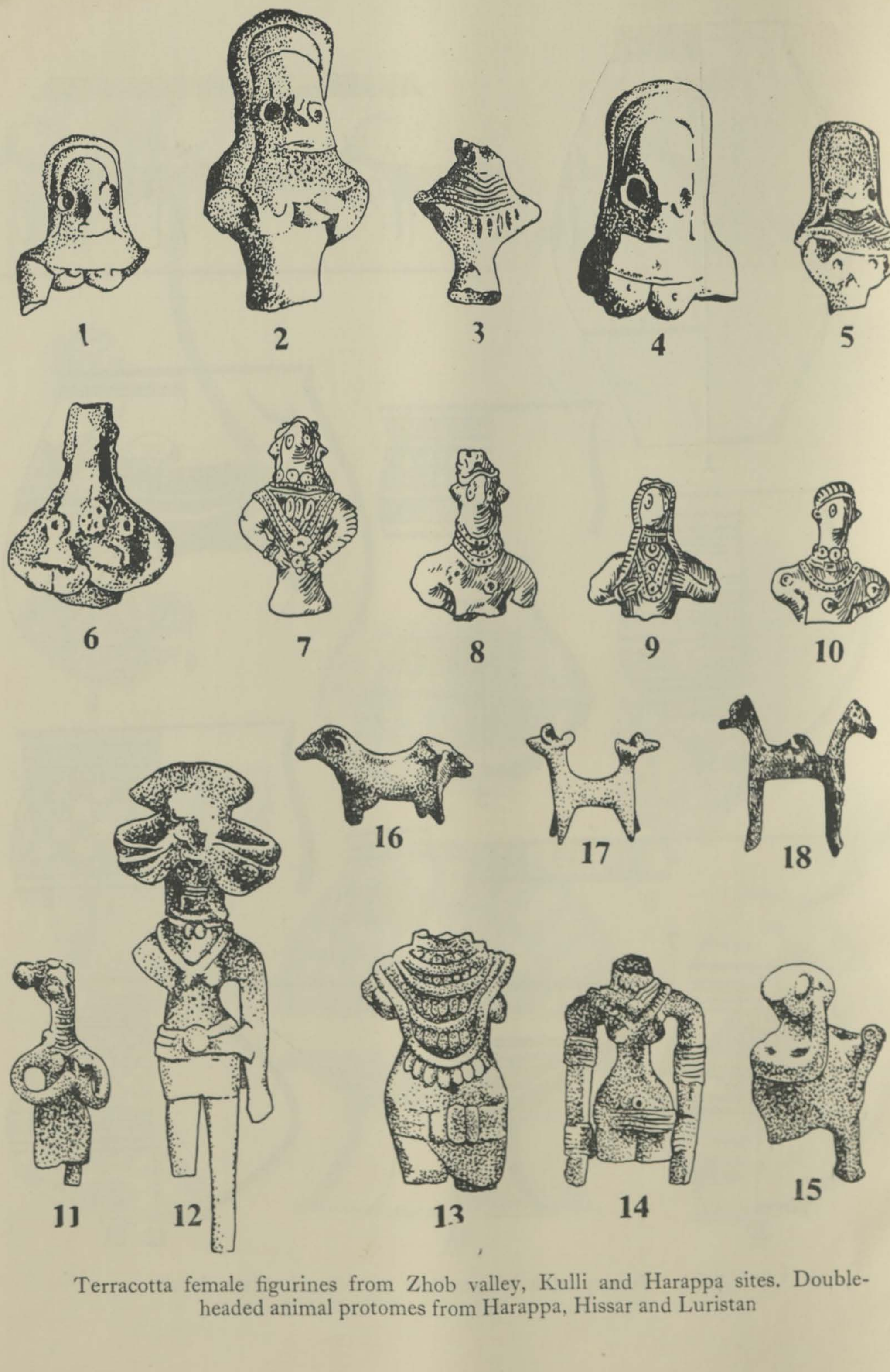
10

Amri. Pottery from 'Harappa' culture levels

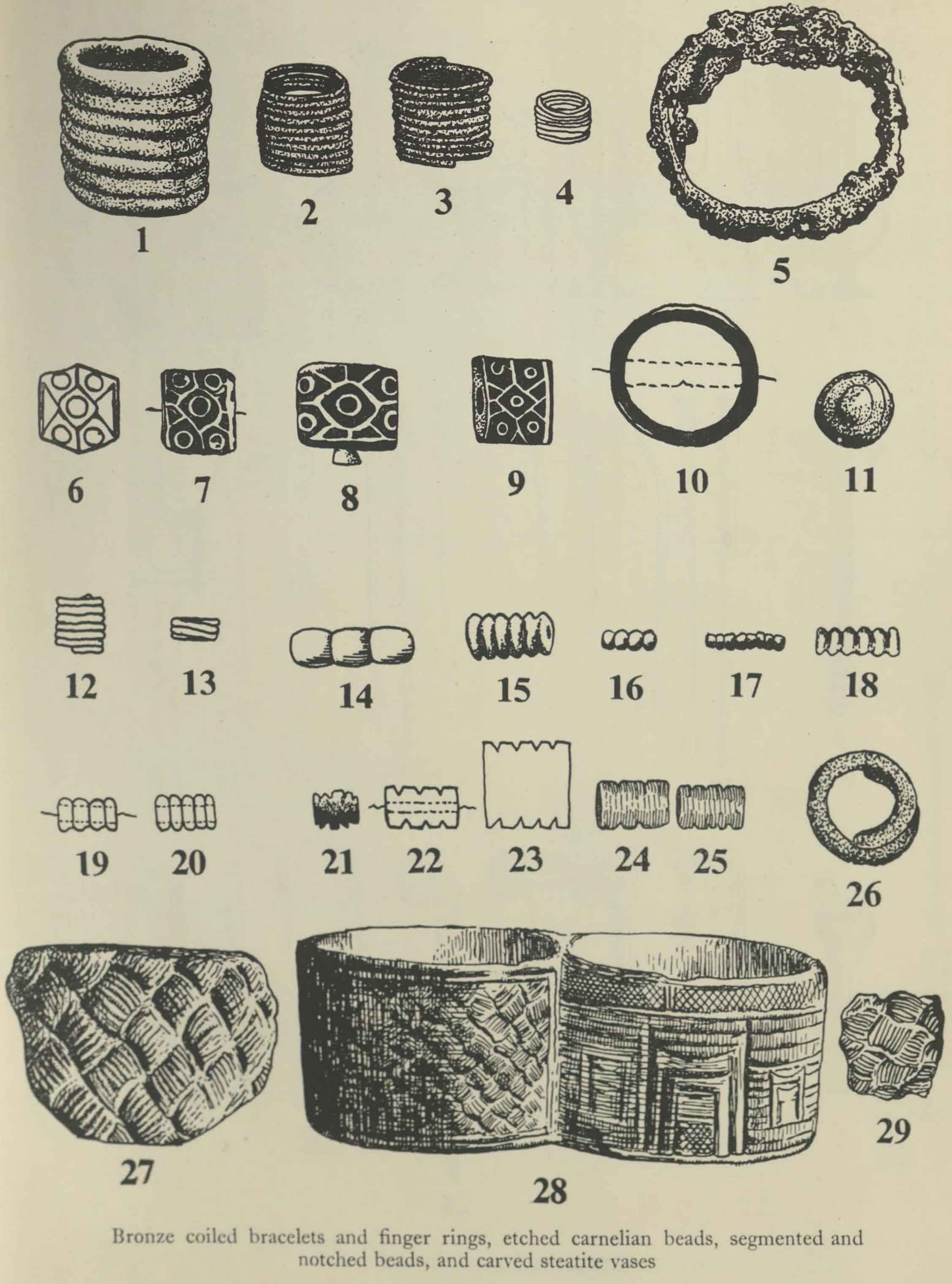


Amri. Pottery from Intermediate and 'Amri' culture levels.

PLATE XLV

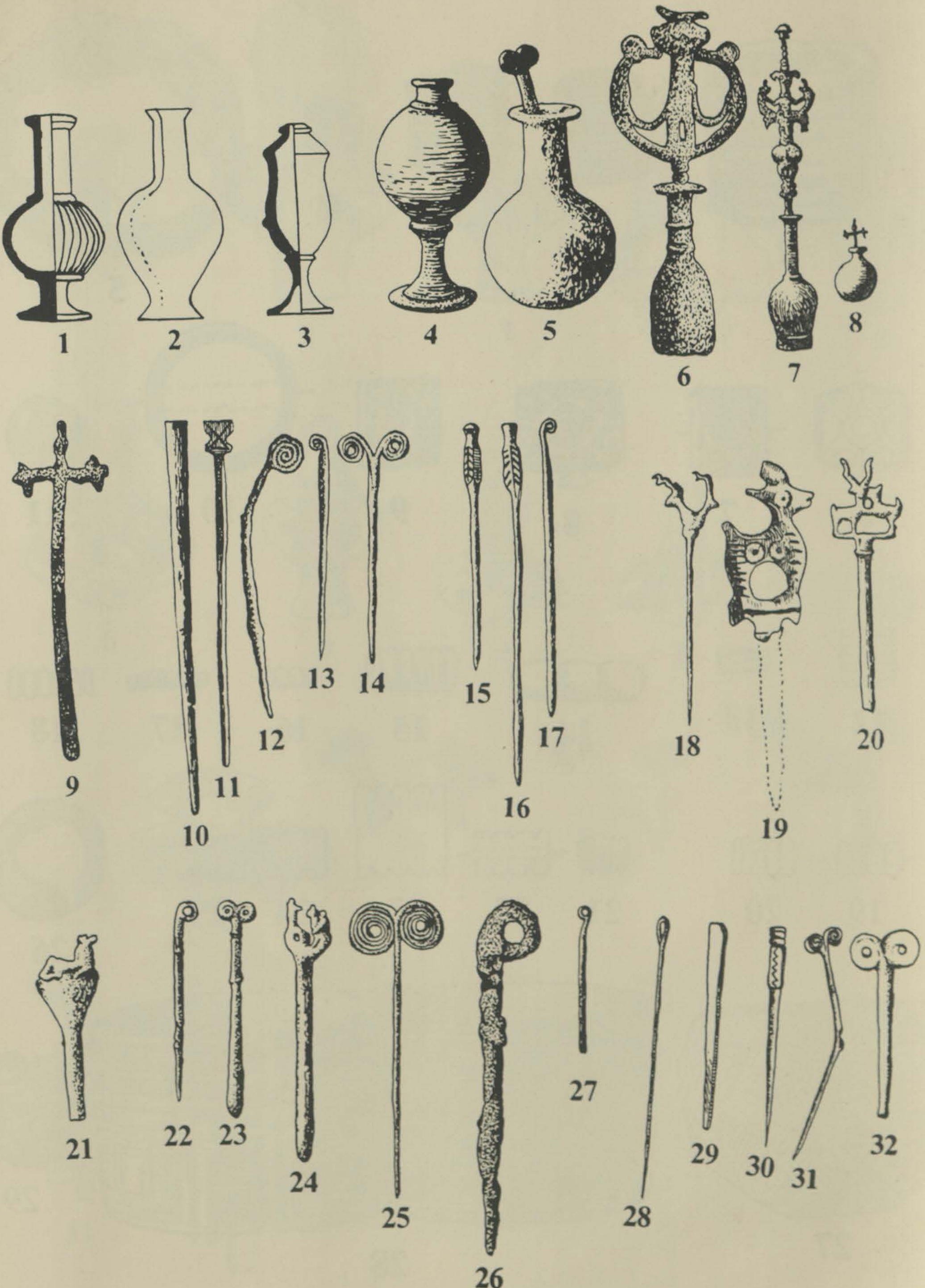


Terracotta female figurines from Zhob valley, Kulli and Harappa sites. Double-headed animal protomes from Harappa, Hissar and Luristan

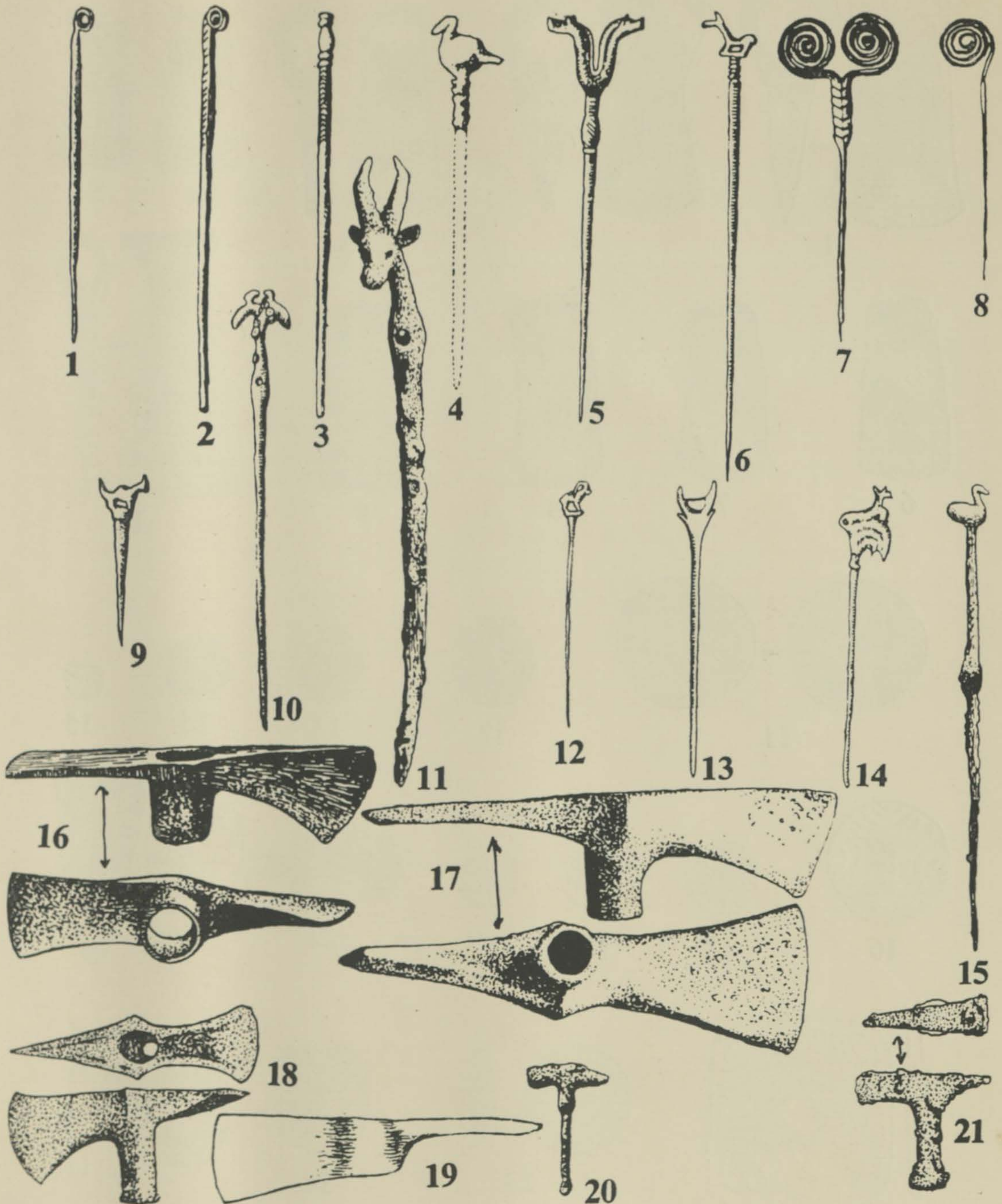


Bronze coiled bracelets and finger rings, etched carnelian beads, segmented and notched beads, and carved steatite vases

PLATE XLVII



Bronze antimony pots and rods



Bronze pins and axe-adzes

PLATE XLIX



Bronze axes from Shahi Tump, Chanhudaro, Maikop, Caucasus and Ur. Stamp seals from Shahi Tump, Chanhudaro, Hissar and Anau